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# fueloil & oil heat

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Keeping track of large volume deliveries, in refueling commercial airliners every hour of the day is a job that calls for the exacting control and precise gallonage measurement of Brodie Meters equipped with Brodimatic Quantrols. Combined with constant and dependable accuracy, Brodie Quantrol Meters provide fully automatic pre-set quality control. Under this method all an operator has to do is to turn the Quantrol setting to the pre-determined gallonage to be delivered. When this exact quantity has passed through the meter, the flow automatically shuts off. Spillage and losses and resultant fire hazards are reduced to a minimum. Get full details on Brodie Meters, today.

# BRODIE METERS

PETROLEUM METERING EXCLUSIVELY

SINCE 1927

**RALPH N. BRODIE CO., INC.**
*953 61ST STREET, OAKLAND 8, CALIF.*

DIVISION OFFICES: *Chrysler Bldg., New York City 59 Van Buren, Chicago 5 • 302 South Pearl St., Dallas 1, Texas • 221-9th Ave., Seattle 9, Wash. 2101 S. San Pedro, Los Angeles 11, California*

VOL. 7, NO. 3

fueloil & oil heat

JULY 1948

## Names in the News

*Robert F. Hume* has been appointed field service manager, L. J. Mueller Furnace Co., Milwaukee, Wis., according to an announcement by Harold P. Mueller, president. Mr. Hume's new responsibilities will include customer relations on all problems involving maintenance and product, as well as the preparation of field service information releases. Since 1946 he has been assigned to Mueller's Product Engineering Department.

*Frank R. Kohnstamm,* who joined the company last October as general sales manager, was elected vice president of Jack & Heintz Precision Industries, Inc., Cleveland, Ohio, at the June meeting of the Board of Directors.

*Harold F. Verona* will direct the coordination of sales, advertising and service in his new position of sales manager, HomEase Products Co., Paterson 3, N. J. He has been identified with sales management and promotional work for the past twenty-five years. His appointment furthers the program to increase the value of the HomEase franchise.

*Walter E. Blake* and *William Gaskell* have resigned as assistant to the manager and chief engineer, respectively, Heating Products Div., Miller Co., Meriden, Conn. Both men will become associated with U. S. Machine Corp., Lebanon, Ind., manufacturers of Winkler automatic heating equipment. Mr. Blake will be eastern sales manager; Mr. Gaskell will become sales engineer for the New York and Long Island territories. Both men are expected to maintain their homes in Connecticut.

*R. W. Dickson,* newly appointed manager of the Capitolaire Div., United

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FRONT COVER: Another reminder that now is the time to perform inspection, cleaning and adjusting services to have all burner installations ready to fire at highest possible efficiencies.

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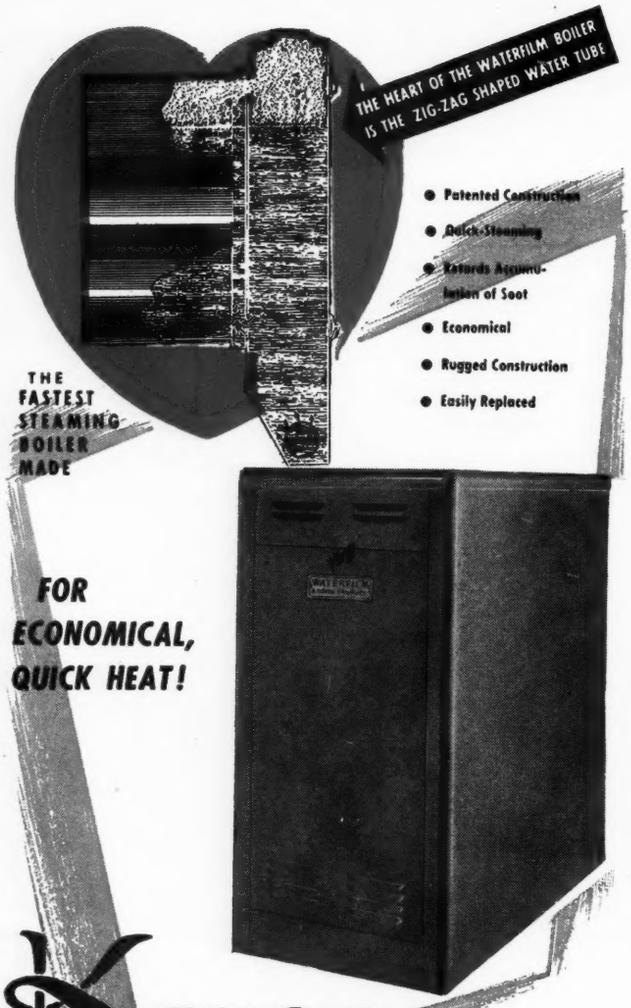


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WATERFILM BOILERS

**Feature the boiler whose exclusive patented construction makes it the fastest-steaming unit on the market—the much-in-demand KOVEN WATERFILM BOILER.**

**Endorsed by leading architects and builders, WATERFILM is an efficient heating plant that insures fuel-saving performance, plenty of domestic hot water at all times and even room temperature. Enclosed in smart, streamlined jackets, there are models and sizes that meet the requirements of small homes, apartment houses and industrial plants. For these larger installations, the Sectional Boiler can be taken through a 2-ft. door, assembled without expensive alteration or rigging costs and is easily enlarged by adding sections.**

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**154 Ogden Ave., Jersey City 7, N. J.**

EVEN ROOM TEMPERATURE THROUGHOUT THE HOUSE!

**FOR AUTOMATIC FIRING WITH OIL, STOKER OR GAS**

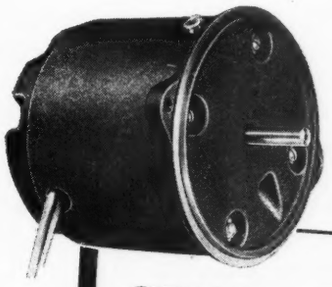
States Radiator Corp., Detroit, Mich., will maintain headquarters at the company's main office. Other appointments saw *A. J. Reebel,* former manager of the Capitolaire Div., become acting manager of the company's branch at Cleveland, and *A. X. Bergeron,* acting manager of the St. Louis branch.

*Frank Gerlach* has been appointed factory representative for General Filters, Inc., Detroit, Mich. His territory embraces Maine, New Hampshire, Vermont and Massachusetts. Mr. Gerlach is well known in this area, having served as Chrysler Airtemp and Automatic Burner representative. During the past twelve years he has acted as a manufacturers' representative serving the plumbing and heating trade, which experience has afforded him a good background to handle wholesale contacts for General fueloil filters. His headquarters will be located in Manchester, Conn.

*Walter Czarnecki, Sr.,* president of Eddington Metal Specialties Co., Eddington, Pa., died June 16, at his summer home in Ventnor, N. J. He was 65 years old, and had spent much of his life in oilburner parts and accessory manufacturing business. He was connected with other manufacturing firms before starting his own business. Surviving are four sons, Wesley, Stanley, Walter Jr., and Casimir, who are active in the Eddington company. Also surviving are his wife, Mary, and a daughter, Nellie Czarnecki. Funeral services were held June 21.

*John W. Akins, Jr.* as central division manager, Comfort Equipment Corp., Chicago, will be in charge of the territory of northern Illinois, western Missouri and all of Iowa, Nebraska, Wisconsin, Minnesota, North and South Dakota. He has had many years of experience in the sales and distribution of heating equipment and is widely known throughout the trade. The company is national sales agents for Quaker and Comfort heating products and allied lines.

# Another orchid for top performance after 13 years in greenhouse service



Some types of oil burner service are tougher than others. In greenhouse operation, for example, an oil burner motor is subjected to higher humidity and longer operating periods. The letter below shows that specifying Ohio Motors assures complete customer satisfaction *regardless of operating conditions.*

## GENERAL OIL HEATING CORPORATION

MANUFACTURERS OF
CARTER AND GENOCO OIL BURNERS
GENOCO BOILER BURNER UNITS
322-326 - 55th STREET
WEST NEW YORK, N. J.
UNion 3{4838 4839

June 11, 1948

The Ohio Electric Mfg. Co.
5900 Maurice Avenue
Cleveland 4, Ohio

Gentlemen:

You will be interested in the performance of an Ohio Motor on our 5-X Burner connected to a boiler in the John Reickert Greenhouse in North Bergen, N. J.

This burner, equipped with your 1/6 H.P. motor, was installed in July 1935. Although Ohio Motors are installed on many of our burners that have been in service longer than this installation, greenhouse operation subjects a motor to more difficult operating conditions. Humidity is higher and operating periods are longer.

Other than an annual cleaning and oiling, nothing has ever been done to this Ohio Motor. And after 13 years it is still good for many more years of trouble-free service.

Very truly yours,

GENERAL OIL HEATING CORP.

BY: Wm D Brooks

Wm. D. Brooks
President

WDB:PB

The motor customers write about—enthusiastically

Ohio MOTORS

**THE OHIO ELECTRIC MFG. CO.**
**5913 MAURICE AVE. • CLEVELAND 4, OHIO**

fueloil & oil heat

# Editorial Leaks

Nothing, it seems, dies quite so hard as the idea of an oil shortage. Once it is born and the announcements have been sent out, the industry seems determined to keep it alive. Grudgingly the petroleum industry appears to have become reconciled to the idea that the fuel-oil shortage is dead, though a few keep looking longingly back at its last struggles. The kerosene supply situation still makes economists uneasy, possibly with cause, but there is not the slightest reason to doubt that there will be enough furnace oil next winter at the present rate of oilburner installations.

About the time the distillate squeeze first was felt last winter, the warning also was issued that gasoline would be short this summer. Some of the more dramatic breast-beaters pictured a large part of the country's agriculture at a stand-still this spring for lack of gasoline, many of the filling stations closed, and cars driving only on rationed fuel.

At present there is about 12% more gasoline in storage than a year ago, and the demand is up about 10%. Major oil companies are looking for gasoline customers, but the statements and the publicity still is cautious in tone. Officials almost apologize for having all the gasoline the public needs, and oil news writers are making excuses.

Nothing has more vitality than a publicised oil shortage scare.

◈

The air conditioning and refrigeration industry is struggling with the licensing problem. Resolutions at the Hot Springs meeting of the Air Conditioning and Refrigeration Machinery Association opposed "registration or licensing of air conditioning and refrigeration contractors" as contrary to the best interests of the public and the industry.

There can be little argument with the resolution. The only wonder is that it was felt necessary to state so obvious a truth.

Just prior to the war there was a wave of enthusiasm for licensing of oil-burner installers and servicemen. In most cases the license was not required of the man himself, but rather a master's license for the dealer who was to be responsible for the installation. There has been no noticeable improvement in the grade of work oilheating men have been doing in recent years. In fact, there is evidence that most of the older installations were more carefully and skillfully done than the more recent ones under a license.

Dealers frequently feel that a rigid licensing ordinance will protect them from competition. This feeling is encouraged by the statesmen of the City Council with the hope of getting industry support for the ordinance. The city fathers seldom object to another bureau to be staffed by the Faithful and to extract fees and penalties. If some industry support can be mustered the task is easier.

Licensing is not a cure-all for industry ills. It does not insure that the public will get its money's worth. Licensing has not made all plumbers competent or all peddlers honest. It cannot take the place of competition as a guarantee to the public that the job will be right and worth the money.

◈

At Boston last month Joe Collins of Buffalo delivered a most significant paper on retail fueloil delivery costs. The formal paper as read dealt in general terms with the problem, and how Frontier was attacking it. In the forum period that followed the papers — as might be expected—somebody asked the $64 question.

Mr. Collins had indicated that in spite of rising costs of labor and materials, the cost of delivering fueloil had not increased. Improvements in the delivery technique had compensated for the rise in costs. There was a rustle through the audience as men turned to raise their eyebrows in the direction of their neighbors.

Then came the question: "Mr. Collins, what does it cost you to deliver a gallon of heating oil?" And the answer was, "Sixty-five points." The rustle became a rumble.

Average cost across the country last year for all types and sizes of dealers was .79 cents per gallon to deliver heating oil to customers' tanks. Frontier had nearly a 20% advantage over the average dealer.

It is reasonable that fueloil dealers should seek better margins from their suppliers in times of increasing costs. There is no secret in the fact a dollar does not cover all the items it formerly did, but the answer should not be sought entirely from the supplier or in higher retail prices. Careful study of a dealer's own operation may be a fertile source of additional revenue. In the competitive days we all expect ahead a better, more efficient operation will pay off handsomely.

◈

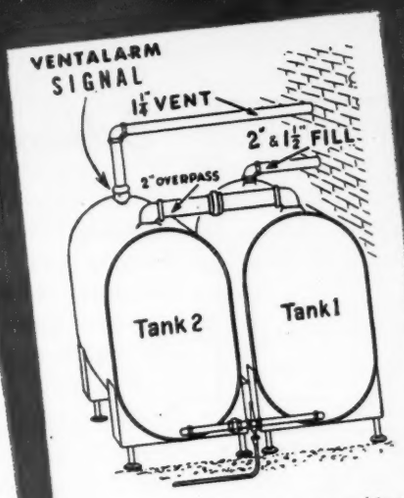
Gas companies, particularly in the Middle West, are hailing a new combination gas and oil burner as the answer to some of their most pressing problems. This device, reported elsewhere in this issue, is designed to switch to oil whenever the temperature goes below a predetermined level. Thus, they say, they can install equipment to burn gas in mild weather, and let oil carry the load when the going gets tough.

Like many a good theory, this one may not work out in practice. When the weather is cold and deliveries are a problem, few dealers will welcome the "casual" customer who wants a drop of No. 1 oil in a hurry. In theory the customer will have a tank full of oil well before he needs it, but from long association with customers, dealers will recognize this as pure theory.

When fueloil—and particularly the lighter fueloil—is not readily available, the customer will go back to gas simply by short-circuiting the switching control. This will drop the load back on the gas company at the time they had planned to abandon it.

It is hard to see how the fueloil dealer is going to be much enthused about dividing a customer with the gas company, especially when he is being asked to carry the heavy end of the load in his most hectic season. We can well understand the gas companies' desire to see this burner become popular.

# TWIN TANKS OR Singles . . .

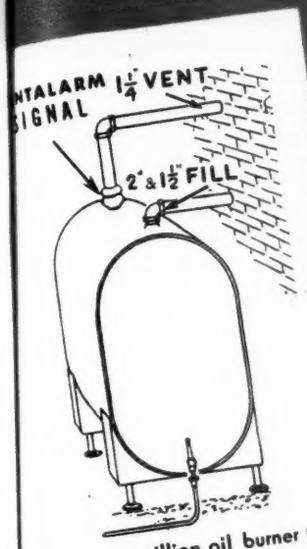



The above method of hooking up two tanks in series has gained popularity in several localities. No "Topping off" is necessary and one VENTALARM® signal, in tank 2, is adequate.

The tanks are connected at the top with a two *inch* overpass. The top of tank 1 and the overpass must be absolutely tight.

In filling oil enters tank 1, displaced vapors passing through overpass and tank 2 and the VENTALARM signal. After filling tank 1, oil flows through overpass into tank 2, until the VENTALARM whistle ceases. Filling should then be stopped.

When filling is stopped, tank 1 is absolutely full and the expansion zone *for both tanks* is in tank 2. Therefore the whistle stem should be cut to provide an expansion zone of thirty gallons adequate for both tanks. The elimination of the three-way valve assures equalization of the two tanks.




Over a million oil burner tanks are equipped with VENTALARM® signal. A very great percentage have been installed on single 275 gallon cellar tanks.

Some 275's are now being buried outside. VENTALARM signal is installed in the vent as always.

The fill line should however be installed so that no air returns back up the fill. Usually buried tanks have a swing joint on the fill which allows the line to run full of oil when delivery is being made. In such case, all air is properly forced out through the VENTALARM signal and vent line. Tight connection when delivering fuel assures concentration of venting through vent pipe.

Whether it's twin tanks or singles, whether buried, or above ground, or in the cellar, VENTALARM® signal can be used to safeguard deliveries.

When you are increasing a customer's storage, making a burner replacement or installing a new burner — use VENTALARM signal in all cases.

# Here's PROFIT!

VENTALARM signal makes possible "MAXIMUM GALLONS DELIVERED per MILE OF TRAVEL with MINIMUM WASTE of TRUCK TIME." That puts hundreds of extra profit dollars in your pocket!

***LA Model for new tanks $1.75***
***LC Model for old tanks $2.05***
F. O. B. Cambridge, Mass.

*Purchase* **VENTALARM® Signal** *through Your Favorite Jobber*

# VENTALARM

•T M REG
*Whistling* TANK FILL SIGNAL

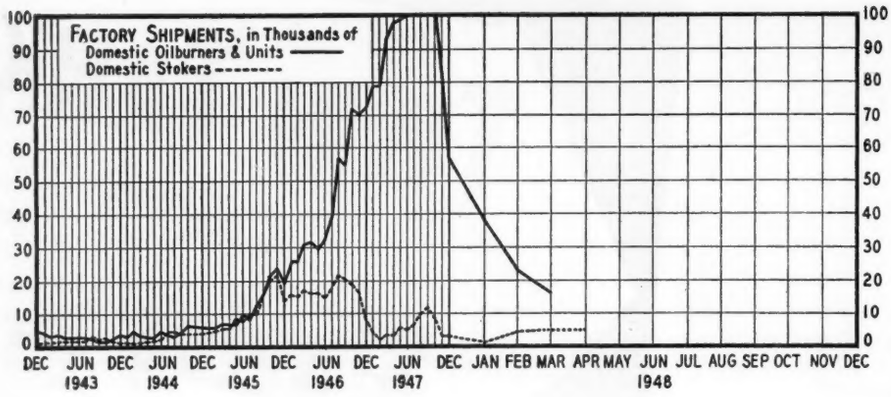
## GONE ARE WAITING DELAYS

Housewives definitely like VENTALARM signal. Whether or not they are at home, they know oil deliveries will be safely made to the correct capacity of their tanks.

## WASTEFUL DELIVERY MOVES ELIMINATED

**NO MORE** in and out of houses —
**NO MORE** up and down stairs — every stop is a drop in complete safety

SCULLY SIGNAL COMPANY 76A FIRST ST. CAMBRIDGE 41, MASS.

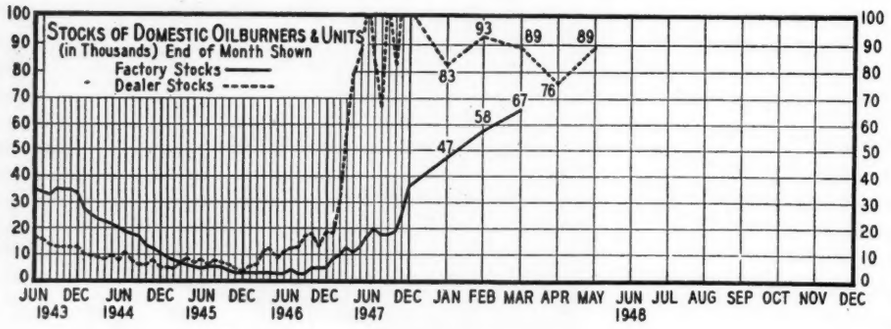

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units ——
Domestic Stokers --------
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947 1948

## Shipments of Oilburners and Units

*(Including Exports)*

Adjusted to include manufacturers other than the 151 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

| | APRIL | | | FOUR MONTHS | | |
|---|---|---|---|---|---|---|
| | 1948 | 1947 | Percent Change | 1948 | 1947 | Percent Change |
| Conversion | 13,500 | 78,396 | — 82.8 | 67,044 | 285,926 | — 76.6 |
| Boiler units | 1,756 | 2,939 | — 40.3 | 7,642 | 12,843 | — 40.5 |
| Furnace units | 4,841 | 16,883 | — 71.3 | 23,274 | 55,043 | — 57.7 |
| All domestic | 20,097 | 98,218 | — 79.5 | 97,960 | 353,812 | — 72.3 |
| Commercial | 2,048 | 4,342 | — 52.8 | 9,853 | 18,507 | — 46.8 |
| Total | 22,145 | 102,560 | — 78.4 | 107,813 | 372,319 | — 71.1 |

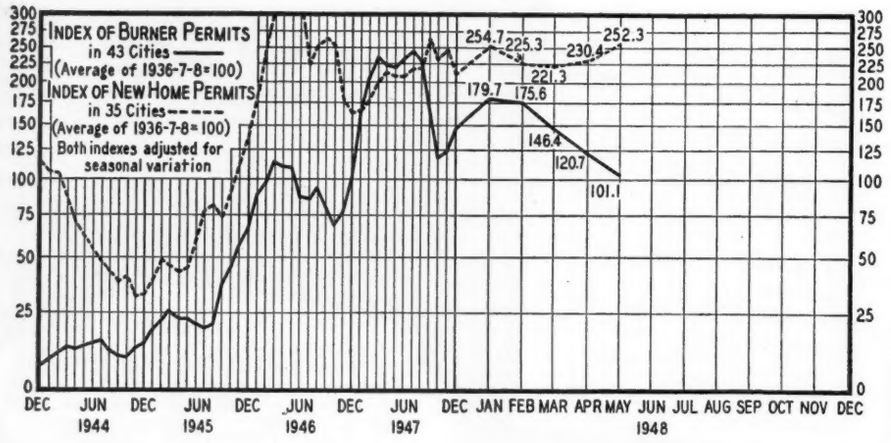



## May Minimum Retail Prices: Key Dealers

| | CONVERSION BURNERS | BOILER-BURNERS | FURNACE-BURNERS |
|---|---|---|---|
| Highest | $510 | $1000 | $850 |
| Lowest | 225 | 425 | 300 |
| May Aver. | 349 | 712 | 628 |
| April Aver. | 352 | 718 | 637 |

## Price Index: Conversion Burners: January 1940 is 100%

| WHOLESALE | | | | RETAIL | | | |
|---|---|---|---|---|---|---|---|
| May | 153.5 | Six months ago | 143.1 | May | 148.5 | Six months ago | 146.4 |
| April | 153.5 | Year ago | 152.0 | April | 149.8 | Year ago | 146.0 |




# Oilheating Trends

PRELIMINARY ESTIMATES of May installations of domestic oilburners and units are 29,061 for the total, and divided: Replacements 6,917; New homes 5,725 and Conversions from other fuels 16,419. Each category showed a rise over April, indicating some revival of public confidence in oil supply, but probably more important, showing that dealers had more confidence, and did some selling. For the first five months of 1948 the preliminary total of installations is 122,822; replacements are 39,216; new home jobs 39,891; conversions from other fuels 43,715. The total to date is 60% below the corresponding period of 1947, based on revised estimates for that period. There are significant indications, however, that the balance of this year will show less of a drop from 1947 than did the first five months.

BURNER STOCKS: Stocks of domestic oilburners and units in dealer hands on May 31 are estimated at 88,981, up 12,130 over the previous month. Factory stocks on April 30, latest available data, were 76,552.

SELLING TANKS: The tank selling campaign on the part of oilheating dealers and fueloil distributors continued strong through May. During the month estimated sales of tanks to enlarge the storage capacity of existing consumers were 13,932, slightly below the 14,083 sold in April. Total such tank sales for five months were 43,238. The additional 275 gallon tank was again the most popular, as the table shows. Average installed prices for various sections of the country and tank sizes are also shown.

*Size Characteristics of May Tank Sales*

| Size | Number |
|---|---|
| 275 gal. | 8,282 |
| 550 | 1,091 |
| 1,000 | 4,173 |
| 1,500 | 161 |
| 2,000 | 225 |

*Average Selling Prices Additional Tanks Installed*

| | 275 gal. | 550 gal. | 1000 gal. |
|---|---|---|---|
| New Eng. | $85 | $230 | $269 |
| Mid-Atl. | 98 | 242 | 311 |
| Midwest | 91 | 170 | 276 |
| Pacific | 85 | .. | .. |
| U. S. Aver. | 92 | 215 | 290 |

FUELOIL ALLOCATIONS: The major oil suppliers are telling more of their fueloil marketers just what they have in mind for next season, as summer months

arrive. By June 1, some 24% of all reporting fueloil distributors had been told that they will have allocations on a basis above their gallonage of last season, with the rise averaging 10%. Three percent were told that they will have less than last season, with the average cut also being 10%. Those who were notified of a rise, or 24%, compare with only 17% who had been so notified a month earlier. By June 1, 35% had been told that they will have next season the same amount as last season, and this compares with 47% the month previous. The remaining 38% as of June 1 had been told nothing about next season limitations, so they are going ahead on an assumption of normal growth.

There was considerable geographic difference in allocation attitudes. For example, in New England only 28% of reporting oil men had been frozen at last season's supply level; in Mid-Atlantic states the number was 45% and in the Midwest 40%. From experience thus far, it is indicated that during later summer months some of those will be opened up for more favorable deals.

PUBLIC CONFIDENCE: Most of the burner sales being made at present are to new prospects being worked for the first time. According to the dealer reports for May, only 10% of the sales made were to families who had previously considered oilheating and then put it off because of lack of confidence. This brings up the important point that dealers and salesmen who have quit worrying about the old prospects and gone after new ones are getting business.

Asked to spot check their prospect files for names that had been about sold and then got scared off by the tight oil situation, the replies from dealers indicate that there are in the country about 60,000 such deferred sales that would come alive when people are convinced that there will be plenty of oil. This group will not be influenced by oil price, in the dealers' opinions; supply confidence is all they need to sign up. That figure is lower than would have been expected, again showing that to get fairly good burner volume in 1948 will require active selling of new prospects.

SCARCITY OF MATERIALS: In view of recent discussions of steel shortages in the country's general economy, it is interesting to check the effect of this on the oilheating industry, as reflected in present shortages of burner repair or oilheating installation materials. About 41% of all reporting dealers mention that their work is being held back by shortage of one or another type of material. Predominant is scarcity of pipe and fittings, with 28% so affected; oil tanks, particularly 1,000 gallon and larger sizes, are short with 10% of dealers; 5% complain of trouble in getting sheet metal; 2% mention electrical supplies, and 1% are held up on radiation. Clearly, the overall situation is far from acute, but whoever can help the pipe situation would be a benefactor.

FUELOIL CONTRACTS: In the country as a whole, 47% of fueloil distributors got their customers to sign fueloil contracts this season. In normal years this runs up to as high as 60%. Of course, far more than 47% of the customers get contracts, since the companies using this method of sale are above the average in

(Continued on page 126)

## Oilburner* and Building Permits

| OILBURNERS | | | | | DWELLINGS | | | |
|---|---|---|---|---|---|---|---|---|
| May | | 5 MONTHS | | | May | | 5 MONTHS | |
| 1948 | 1947 | 1948 | 1947 | | 1948 | 1947 | 1948 | 1947 |
| 18 | 2038 | 406 | 5463 | Baltimore, Md. | 388 | 176 | 1789 | 929 |
| .. | .. | .. | .. | Binghamton, N. Y. | 10 | 15 | 25 | 39 |
| 162 | .. | .. | .. | Boston, Mass. | 25 | 17 | 138 | 84 |
| 58 | 81 | 281 | 453 | Bridgeport, Conn. | .. | .. | .. | .. |
| .. | .. | .. | .. | Buffalo, N. Y. | .. | 23 | .. | 73 |
| .. | .. | .. | .. | Des Moines, Ia. | 77 | 112 | 363 | 324 |
| .. | .. | .. | .. | Detroit, Mich. | 611 | 649 | 3374 | 3612 |
| 17 | 51 | 221 | 159 | Elizabeth, N. J. | 3 | 13 | 5 | 63 |
| 10 | 41 | 55 | 147 | Freeport, N. Y. | .. | .. | .. | .. |
| .. | .. | .. | .. | Greenwich, Conn. | 31 | 12 | 95 | 79 |
| .. | .. | .. | .. | Hackensack, N. J. | .. | 0 | .. | 14 |
| 20 | 56 | 45 | 168 | Irvington, N. J. | 7 | 1 | 18 | 10 |
| .. | .. | .. | .. | Lynn, Mass. | 14 | 15 | 48 | 41 |
| 9 | 31 | 103 | 116 | Meriden, Conn. | .. | .. | .. | .. |
| 123 | 269 | 607 | 921 | Milwaukee, Wisc. | 287 | 149 | 744 | 425 |
| 47 | 95 | 424 | 586 | Minneapolis, Minn. | 154 | 84 | 499 | 315 |
| 28 | 25 | 97 | 113 | Montclair, N. J. | .. | .. | .. | .. |
| .. | .. | .. | .. | Morristown, N. J. | 0 | .. | 1 | .. |
| 18 | 50 | 64 | 156 | Mt. Vernon, N. Y. | .. | .. | .. | .. |
| 74 | 56 | 305 | 289 | New Bedford, Mass. | .. | .. | .. | .. |
| 45 | 88 | 127 | 279 | New Haven, Conn. | .. | .. | .. | .. |
| 0 | 0 | 0 | 0 | New Orleans, La. | .. | .. | .. | .. |
| 17 | 26 | 56 | 116 | New Rochelle, N. Y. | 8 | 9 | 41 | 27 |
| .. | 4558 | .. | 22,509 | New York City (total) | .. | .. | .. | .. |
| .. | 3666 | .. | 18,571 | Brooklyn-Queens | .. | .. | .. | .. |
| 335 | 892 | 1671 | 3938 | Manhattan, Bronx, Rchd | .. | .. | .. | .. |
| 131 | 82 | 535 | 421 | Norfolk, Va. | 54 | 33 | 262 | 140 |
| 1 | 1 | 5 | 8 | Oakland, Calif. | .. | .. | .. | .. |
| 69 | 312 | 463 | 655 | Omaha, Neb. | 76 | 65 | .. | 251 |
| 13 | 24 | 47 | 72 | Orange, N. J. | 0 | 1 | 6 | 3 |
| 27 | 42 | 80 | .. | Passaic, N. J. | .. | .. | .. | .. |
| 50 | 113 | 134 | 331 | Paterson, N. J. | 8 | 6 | 36 | 14 |
| 420 | 1047 | 1543 | 3529 | Philadelphia, Pa. | .. | .. | .. | .. |
| .. | .. | .. | .. | Plainfield, N. J. | 8 | 10 | 35 | 91 |
| 20 | 102 | 94 | 398 | Portland, Me. | 18 | 20 | 64 | 60 |
| 438 | 792 | 2224 | 3090 | Portland, Ore. | .. | 104 | .. | 605 |
| 7 | 19 | 53 | 91 | Poughkeepsie, N. Y. | .. | .. | .. | .. |
| .. | 85 | .. | 496 | Providence, R. I. | .. | 9 | .. | 43 |
| .. | .. | .. | .. | Reading, Penna. | 2 | 1 | 12 | 7 |
| .. | .. | .. | .. | Richmond, Va. | 42 | 87 | 486 | 273 |
| .. | 306 | .. | 888 | Rochester, N Y. | .. | .. | .. | .. |
| 14 | 19 | 85 | 84 | Rockville Center, N. Y. | 35 | 18 | 74 | 61 |
| 8 | 34 | 63 | 140 | Salem, Mass. | 8 | 4 | 26 | 14 |
| 167 | 157 | 539 | 678 | St. Louis, Mo. | 68 | 38 | 178 | 140 |
| 46 | 227 | 469 | 967 | St. Paul, Minn. | 118 | 87 | 370 | 340 |
| 37 | 56 | 340 | 398 | Schenectady, N. Y. | .. | .. | .. | .. |
| .. | .. | .. | .. | Seattle, Wash. | 174 | 212 | 923 | 922 |
| .. | .. | .. | .. | Springfield, Mass. | 64 | 41 | 241 | 131 |
| 30 | 32 | 196 | 141 | Stamford, Conn. | .. | .. | .. | .. |
| .. | .. | .. | .. | Syracuse, N. Y. | .. | 18 | .. | 68 |
| .. | .. | .. | .. | Trenton, N. J. | 2 | 0 | 11 | 43 |
| .. | .. | .. | .. | Utica, N. Y. | 16 | 4 | 39 | 15 |
| 78 | 245 | 447 | 1127 | Washington, D. C. | .. | .. | .. | .. |
| .. | .. | .. | .. | West Orange, N. J. | 13 | 10 | 63 | 31 |
| 12 | 25 | 71 | 87 | White Plains, N. Y. | 12 | 5 | 46 | 15 |
| 53 | 85 | 288 | 382 | Wilmington, Del. | 31 | 11 | 68 | 44 |
| 94 | 145 | 389 | 639 | Worcester, Mass. | .. | .. | .. | .. |
| 2 | 50 | 83 | 182 | Yonkers, N. Y. | .. | .. | .. | .. |
| 2536 | 7408 | 12,610 | 26,324 | *Totals* | 2364 | 1905 | 10,079 | 8292 |
| —65.7 | | —52.1 | | *Percent Change* | +24.1 | | +21.5 | |

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

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# *Fueloil Supplies*

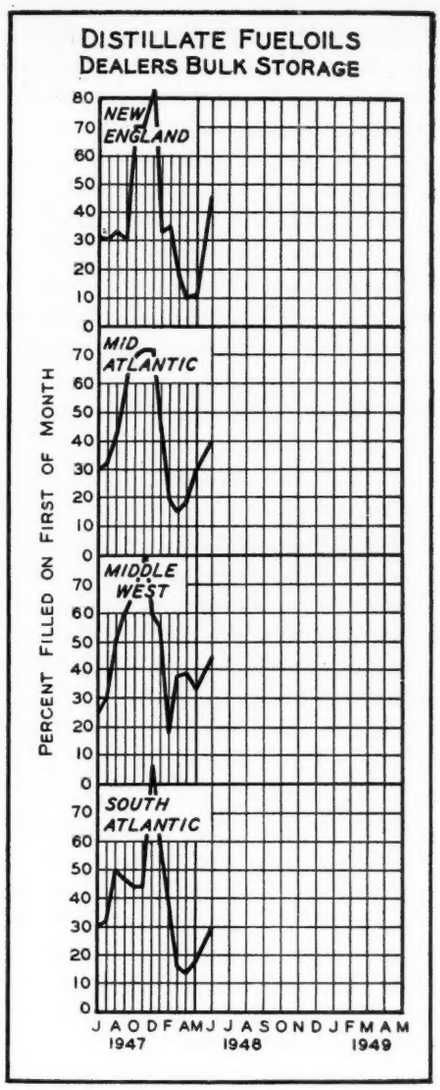
ON JUNE 1 local fueloil distributors had in their bulk tanks distillate stocks equal to 41% of their capacity. This compares with 26% on May 1, and with 29% on June 1 a year ago. Kerosene stocks on June 1 stood at 51% of dealer storage capacity, compared with 30% on May 1, and with 43% on June 1, 1947.

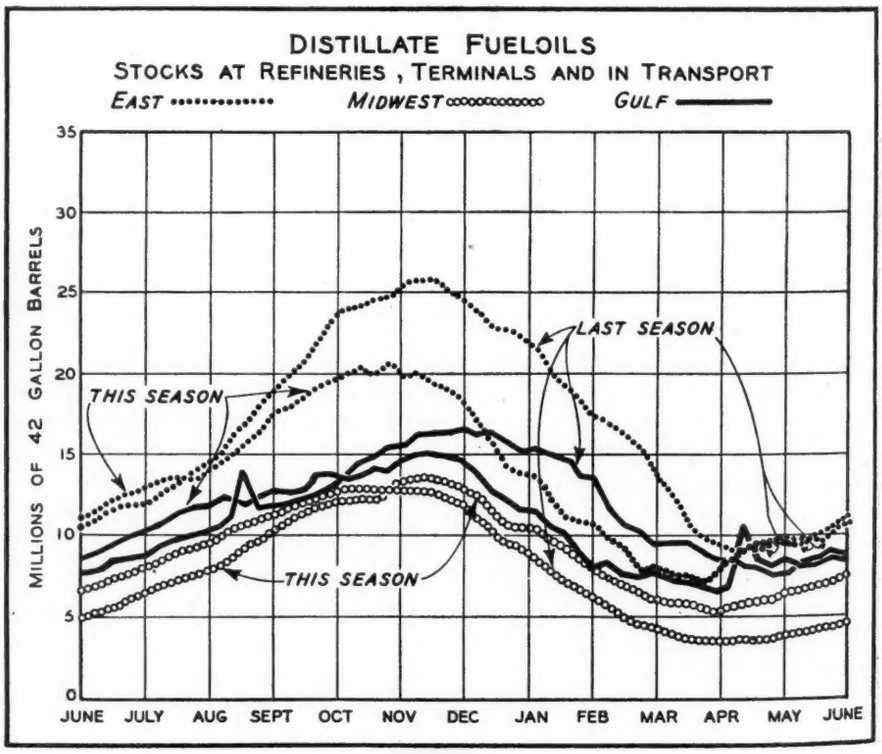
DEALER STOCKS

(Thousands of Barrels)

| | No. 2 or 3 Distillates | No. 1, Range, Kerosene |
|---|---|---|
| East Coast | | |
| 6-1-48 | 6,151 | 2,070 |
| 6-1-47 | 4,617 | 1,937 |
| Midwest | | |
| 6-1-48 | 1,741 | 1,039 |
| 6-1-47 | 1,024 | 509 |
| East of Rockies | | |
| 6-1-48 | 7,892 | 3,109 |
| 6-1-47 | 5,641 | 2,446 |
| Percent Change | +39.9 | +27.1 |

Distillate stocks at refineries, in primary storage or in transit on June 19, the latest available data, were 31,740,000 Bbls. in the area East of the Rockies, compared with 27,513,000 Bbls. for the corresponding week of the previous year, a rise of 4,227,000 Bbls., or 15%.



# Dollars for Extra Care

## Less Damage and Better Morale Come from Incentive System

by

A. E. Coburn

**Carragher Brothers** *at Lowell, Mass., operate this model bulk plant to supply their many oilheating customers.*

INCENTIVE makes the wheels go 'round in these United States. Almost nothing is impossible of achievement if it is worth while for somebody to do. We build cities, span oceans and operate successful oilheating businesses when those things become profitable to the people engaged. Even unusual records of safety get their start in a system that makes care profitable.

This is the story of unusual care exercised by six employees of Carragher Brothers, Lowell, Mass., a prosperous oilheating concern headed by genial Herbert L. Carragher. It is a comfortably sized business in a small city on the edge of the Metropolitan Boston area. It is neither large nor small. The concern delivers a little less than 2,000,000 gallons of heating oil to slightly under 1,000 customers, and is growing. Except for an unusually attractive plant on the Boston & Maine Railroad just south of town, and the spic-and-span appearance of the garage, shop and offices, there is little that distinguishes the physical operation from many others.

Carragher Brothers holds the Timken franchise in the community; sells, installs and services oilheating equipment and supplies it with fueloil. Its 220,000 gallon bulk plant is supplied wholly by Shell, and fueloil is delivered in five attractive blue trucks.

The chief difference between this and hundreds of other good oilheating operations is more subtle than the even bluestone that carpets the yard or the lack of wastepaper drifted in the corners of the fence. There is a spirit around the place that is hard to define. There is an air of purpose; of hustle without headlong haste, and without tension. The operation runs smoothly without apparent close supervision. In fact they tell you the big problem is to find the boss when they want him. Miss Ethel Northrup who is Herb Carragher's Girl Friday, usually knows what is supposed to happen next, anyway. Men stick their heads in the office door at quitting time to inquire if there is anything urgent that needs doing before they leave. You wonder what sparks and maintains this spirit.

"We've never had any serious trouble with our people," Herb Carragher tells you. "They are all good people. We expect them to do a good job and they do. Like everybody else, we used to have some turn-over in drivers and servicemen, but that has decreased now so it is not a problem."

During the late depression years it was a too prevalent practice for employees to spend their vacation time working for a competitor, and too often after this period of double pay, they didn't come back. The loss of some did not hurt too much, but it was hard to replace others. To correct this situation the company devised a "kitty"; a kind of welfare fund for employees. This was fed by a small percentage of the gross from equipment sales, and was set aside in a savings account where it could be drawn on in times of emergency or for vacations. A simple system of allocation assured each employee of his share of the fund each year, according to his length of service. In many cases his cut from the kitty would finance a man's vacation. Instead of working for someone else, he would rest and come back ready for work. Money was available for emergencies that otherwise would have meant borrowing at interest from outside sources. Labor turn-over decreased, and the attitude of employees toward the company improved.

### The Idea Grows

In fact, the care-free atmosphere around Carragher Brothers became a problem in itself, Herb Carragher remembers. The boys really were turning out the work, but some of it was very poor. One day a driver went into a basement to stick a tank and was told the burner was off and the house was getting cold. A quick check showed the water level in the steam boiler was too low and the low water cut-off was holding the line open. He cracked the feed valve and went back to the truck to pump off. A few hours later he had

to go back and close the valve—and shovel fallen plaster out of the kitchen.

The bill for damages, even in prewar days, was sizable and totally unnecessary. The man could not be charged for the whole cost or any major part of it, and it irked the officers of the company to be stuck for damages due to carelessness. After discussion—some of it heated—it was decided to pay the damages out of the kitty in the savings

**This tank,** *facing the railroad, is visible from all trains to and from Boston.*

bank. There was some grumbling; mostly from the other men and little from the fellow who had escaped with small personal loss. He took some abuse from the other fellows for a time but the thing blew over.

Late the next spring another driver was making a drop to a buried tank with a fill pipe in the middle of the lawn.

"I don't know whether he misread the gauge," Mr. Carragher relates, "or whether he was looking for four-leaf clovers, but before he could get to the truck about five gallons of our best domestic heating oil had mushroomed out of the pipe and settled into the lawn. That stuff makes very poor fertilizer. The first thing I knew about it was an agonized howl from the customer. He didn't think the big brown spot around his fill pipe looked well with the green of the rest of the lawn."

A gardener dug out the oil-soaked sod, filled the space with top soil and fertilizer, rolled the spot, seeded it and rendered a bill for $53.00. Again, this was a charge for carelessness that was beyond the control of management. To take such a sum out of the wages of a driver was out of the question, so again the savings account was called on to stand the rap. Again there was grumbling in the ranks, but this time there was action.

"The next Saturday morning when I got to the yard," Mr. Carragher remembers, "there wasn't a man around the place. Saturday morning normally is clean-up day during the summer. I asked the girl where everybody had gone, and she reported that the boys had piled barrels, buckets and shovels into one of the trucks, and they had gone out to do a little gardening around several fill-pipes. Apparently they thought commercial rates on such work were too high. We haven't had any serious complaints about spills ruining lawns since that time, and several people have commented on the unusual care we exercise in preserving their property. Missing pickets out of yard fences, damaged corner boards on homes, dented fenders and tire marks on lawns all are repaired before there is any claim filed with the company for damages."

Apart from rather unusual efforts that have been made to repair damage from time to time, the overall effect has been to make everybody in the organization conscious of the high cost of carelessness. In the ordinary course the company pays for any mishap that befalls a customer due to an error on the part of an employee. The employee shrugs, feels vaguely sorry for his mistake, and goes merrily on to the next blunder. Too many mistakes, and out he goes, but in the meantime the dealer may have a sizable investment in oil-soaked sod, twisted bicycles and dented fenders. Firing a man will not redeem those dollars.

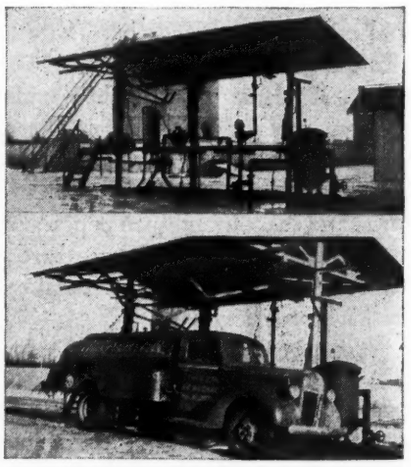
### No Substitute for Insurance

This plan is no substitute for liability insurance, Herb Carragher warns. It is not a means of buying caution cheaply.

"The same percentage of the gross would buy more liability insurance than we ever would need," Mr. Carragher says, "but that would not make up for the customer ill-will that foolish accidents generate. The best way to avoid that ill-will is to avoid the accidents, and insurance doesn't create a desire for care on the part of employees. The plan, as it originally was conceived, had as its primary objective employee good-will, and as it grew it was made to help as well in the generation of customer good-will. These still are the chief objects of the 'kitty' in the savings bank, not essentially to cut the accident rate.

"If you have a crew around you that is doing the right kind of a job," he continues, "you want them to take an interest in their jobs, and be interested in fostering your business. The best way to accomplish these ends is to make it worth their while to do the best possible job, protecting your interests along with their own. Further, you want them to spend all their time working for you and not looking for another job, worrying about financial problems, or brooding over an injustice, either real or imaginary. When you give them a vacation you want them to rest and enjoy themselves. We think it is worth paying something extra to be sure of getting those things. It isn't charity, or paternalism. We think it is good business."

Payment of damage claims out of the fund is not intended as a penalty, though it may be viewed in that light by some of the men. Those payments do not reduce the regular wages of the employees but only the extras they otherwise might receive. It is important that the fund not be abused or used as a threat over the heads of the men. It is there for their use, and no charges should be made against it that are not acquired directly as a result of carelessness or neglect. If judiciously handled, it can be a great spur to better morale in the organization, and will automatically urge care and closer attention to the job.



**Loading rack** *(above) in the middle of the yard. Below, one of the blue Carragher trucks stands ready to take on a load.*

Incentive certainly makes the difference between a very ordinary employee and a very good one. A bonus for extra effort is the surest way to insure the delivery of that extra effort every employer would like from his helpers.

# Space Heater Considerations

## In Spite of Bad Oil Supply Publicity, Oil Stoves Still Popular

RECENTLY IN WASHINGTON Eugene Holman, president of the Standard Oil Co. of New Jersey, was speaking at the regular weekly lunch meeting of the National Press Club. In general, he wanted to tell this large group of newspaper men, commentators and columnists that they could now stop writing the gloomy stuff about petroleum supply —that he saw no reason why any American was going to have to change his normal habits of life because of shortage of petroleum, and that applied not only to gasoline this summer but also to fuel-oil next winter.

When he had finished the prepared paper, a lot of the boys passed up questions for him to answer. One fellow asked why it was that when we have so many prophets of gloom over petroleum supply, Holman could stand there and radiate so much sunshine. His reply was a classic. He said it's all in the way you're built—that everyone pretty well understands the actual facts and figures, and that the pessimists take the view that a lot of dire things will probably happen to upset the projections, while the optimists are content to believe what they see and not go looking for trouble.

We still have a lot of pessimists among high level oil men, but within the past two months we have seen a good number of them swinging over into the plus column. During April and May no less than eight important officials of major oil companies said in public meetings that we could expect for next season plenty of heating oil for present customers and in addition could take on a few new ones. Some of them said that we can safely take on eight to ten percent more oil customers.

It would not be safe, however, to take the position that from here out we can all go high, wide and handsome and put in a few million more space heaters all of a sudden. The general petroleum outlook is good, but some products look better than others. The kerosene type products, such as range oil, kerosene and No. 1 fueloil are giving us all some anxiety over the oil industry's ability to meet the rise that space heater men want.

Naturally, there will be no trouble in furnishing as much more of those light products as the industry's overall growth would make available, something like seven or eight percent for the year. But when you try to go beyond that point, the refinery experts keep telling us that they cannot to any extent raise the kerosene percentage of the barrel, even if they were willing to take it away from gasoline or some other product.

Looking farther ahead than next season, a part of your solution is to have increasing quantities of No. 1 fueloil made available, since it is possible to increase the percentage yield of that kind of oil. Some of the major oil companies are working on plans to provide No. 1 oil for sale on the East Coast. From present indications, it should begin showing up in about a year from now. One drawback to be overcome is the lack of dealer storage capacity. After handling only two products, kerosene and No. 2 oil, through all the years, dealers will resist taking on the third, but with the majors starting it, they will all swing around in time. Unfortunately, the industry can't count on any help of that kind as early as next winter.

**This is a condensation of a paper by Robert Gray before the Institute of Cooking & Heating Appliance Manufacturers at their June 7-9 convention in Cincinnati.**

The way things are now shaping up, space heater manufacturers will need to exercise some restraint for at least a year. There has been considerable talk about selling this year a million space heaters, of which 350,000 would be replacements of old heaters and only 650,000 would be sold to new oil users. There is also mention about having five million space heaters in use at the first of this year, so if we add to those the 650,000 new users, it will raise the fuel demand by 13%. With overall petroleum supply up only seven to eight percent on the year, and with the refiners saying that they can't further increase the kerosene fraction of the barrel, we are probably stretching things about far enough when we ask for 13%.

From the way things now look, it may be hard to hold the volume down to 650,000 new oil users. On the first of the year there were apparently around 300,000 space heaters in dealer and jobber stocks. During the first three months, according to the Census Bureau, there were shipped 263,000, not including portables. So there were over a half million available in the field during the first three months.

### Recognize Responsibility

The more substantial manufacturers, with any real capital investment in the space heater business, don't want to see more troubles with consumers next winter. To avoid them, it's beginning to appear necessary to moderate such sales now.

The Census Bureau stove report for the first quarter was quite interesting in several ways. It showed that the flush market for heating stoves has been taken care of, for the sum total of all types shipped was down 28% from last year. Surprisingly, oilheating stove shipments were off only 18%, while gas stoves dropped 23%, coal stoves were down 35% and wood 62%. In spite of the great amount of bad publicity on oil, people still prefer it for heating stoves.

It's hard to tell how much the market is being affected by the price of oil. It may actually go up still more, although certainly we hope not. Two major oil men in public statements within the past two weeks have prophesied that prices would rise further. One thing is fairly definite—we can't look for lower prices until well in the future.

As an industry we need to do everything we can to help the consumer hold his fuel bills in line, by providing equipment that will burn the expensive oil with the highest possible efficiency. It

has been quite disturbing to see in recent months the number of oilburning appliances that were going on the market without Commercial Standards labels. That has been true of oilburners, space heaters, floor furnaces and pot-type central heating furnaces.

### Half Meet Standards

The F.H.A. is getting stirred up about it, and is planning to tighten up compliance on new home work. During the past 18 months, 69 new pot-type furnaces, floor furnaces or space heaters have gone through the Underwriters Laboratory and been listed. Only 35 of these have met the requirements for Commercial Standards labels . . . the other 34 have not.

Among the pot-type furnaces listed the score was just 50-50; there were 12 with the CS 104 label and 12 without it; among the floor furnaces, only four got the CS 113 label, and nine skipped it; space heaters showed 19 getting the CS 101 label and 13 ignoring its requirements.

Doesn't it seem reasonable that if space heater volume is going to be limited by oil supply, it might be well to concentrate on higher priced, more efficient items of equipment, for the good of the public now and for the good of the industry in the long run? The power oilburner manufacturers have the same problem . . . they have been getting a lot of listings on new burners without the Commercial Standards label. Fortunately for both groups, and for the public, the Commercial Standards labels are generally going to the larger companies that do the lion's share of the business. So when we say that non-standard products represent half of the number listed, we know that they account for much less than that share of the total items shipped.

Now let's spend a moment on the subject of tanks. Perhaps some take little interest in fuel storage, particularly when selling space heaters through department stores and other general retailing outlets. When the store sells a space heater, its inclination has been to include a small tank, to hold the price down.

But within the oil industry, the whole subject of consumer storage has been highlighted by the supply problems of last winter. A real revolt has grown up against the user with only one drum, or 55 gallons storage capacity. In the Southern states are several oil marketers serving large numbers of space heater customers who have notified them that they won't supply them a drop next season unless they put in 275 gallon tanks. Of course most of the companies do not take so positive a stand, but some of them will start a system of price differentials, putting a stiff penalty on the small tank customer.

There are three considerations pointing to the need for larger oil storage facilities for the space heater user.

First, we all know that the refiner doesn't make heating oil only in the winter . . . he has to make it all year round and store it somewhere. It is not practical to store it at the refinery, because if he did that he would find in the heating season that there were not enough tankers or tank cars or pipelines to carry it away fast enough to meet the public needs. So he must keep it moving away from the refinery about as fast as he produces it. At the same time it is evident that oilheating is growing so fast that somewhere along the line provision must be made to store an ever increasing amount of fuel, from summer to winter.

The second consideration involves the possibility of storing this oil at the terminal or dealer level. That can be done of course, but the big tanks require a lot of investment by any individual company, and to the extent that they can get the consumer to take on a part of the storage problem, the oil men will hold down their own bulk storage expansion. Large tanks before the war cost around 58¢ per barrel of capacity; today they cost $1.50. So the dealer or terminal operator won't make any more investments of that inflated variety than he is forced to. Furthermore, if the dealer should provide the bulk of the increased storage capacity, he would still have to concentrate his fuel deliveries in the winter time, which means he would have to have enough men and trucks to handle a high peak for 60 days.

### Oil Man's Ideas Change

It's true that he always did it in the past, but as the business continues to grow by leaps and bounds, these inefficient situations become increasingly highlighted. In a strong seller's market, such as we have in petroleum today, everyone feels that it's a good time to clean house of those wasteful practices. So if the storage expansion can be moved out to the consumer level, deliveries can be made more uniformly throughout the year. When a consumer has a 275 gallon tank with a space heater, he can take from a third to a half of his full year's needs in the summer.

The third consideration involves the consumer himself. After last winter's experiences with kerosene and light oil supply, particularly in the East and South, he seems quite anxious to get a bigger tank, just to be able to feel that he has more control over his own supply. Obviously, he is right in this, not only because he can take a large summer fill, but even more important, because the oil man will want his business.

It means a lot to an oil man to make a big drop instead of a small one. In some parts of the country today some of the saving is passed along to the customer, but even where this is not done, it is still important to be looked upon as a desirable customer.

With a large efficient oil distributor, it costs about a cent a gallon to make a 200 gallon drop, which is around the average size put into a 275 gallon tank. In other words, it costs $2 for the truck operation and driver's wages. A 50 gallon drop costs almost as much, for the only saving is in the pumping time through the hose at the rate of 35 gallons a minute . . . about a five minute saving. So it's obvious that while a 200 gallon delivery costs about a cent a gallon to make, the 50 gallon drop can cost as much as three cents.

When we get back to a competitive situation in the oil industry, people with larger storage will get price advantages, while today they certainly get supply advantages, because everyone wants their business.

"It was the boss's idea to have his picture put on the clock - and it has stopped clock watching!"

**Comparative Production Statistics On Domestic Space Heating Appliances**

| Year | Coal and Wood | Gas | Oil |
|---|---|---|---|
| 1927 | 1,273,909 | 851,977 | 210,007 |
| % of total | 54.54% | 36.47% | 8.99% |
| 1929 | 886,721 | 997,422 | 196,060 |
| % of total | 42.63 | 47.95 | 9.42 |
| 1931 | 668,574 | 446,996 | 108,407 |
| % of total | 54.62 | 36.52 | 8.86 |
| 1933 | 915,675 | 253,177 | 197,723 |
| % of total | 67.00 | 18.53 | 14.47 |
| 1935 | 923,724 | 308,079 | 496,604 |
| % of total | 53.44 | 17.83 | 28.73 |
| 1937 | 1,445,144 | 813,258 | 907,353 |
| % of total | 45.65 | 25.69 | 28.66 |
| 1939 | 1,037,504 | 662,850 | 719,463 |
| % of total | 42.88 | 27.39 | 29.73 |
| 1943 | 1,948,470 | 334,991 | 114,483 |
| % of total | 81.26 | 13.97 | 4.77 |
| 1944 | 1,501,265 | 590,111 | 340,312 |
| % of total | 61.74 | 24.27 | 13.99 |
| 1945 | 1,644,739 | 743,881 | 573,648 |
| % of total | 55.52 | 25.11 | 19.37 |
| 1946 | 1,622,816 | 1,256,362 | 1,319,728 |
| % of total | 38.65 | 29.92 | 31.43 |
| 1947 | 1,338,170 | 2,660,930 | 2,421,928 |
| % of total | 20.84 | 41.44 | 37.72 |
| 1948 (First 3 Mos.) | 171,822 | 494,849 | 464,156 |
| % of total | 15.19 | 43.76 | 41.05 |

DATA *compiled by Institute of Cooling & Heating Appliance Manufacturers*

Down through the years there has been a strong tendency on the part of the power oilburner and the vaporizing or pot-type burner groups to believe that they were different breeds of cats. In a sense they are, of course, but certainly today no one could say that they don't have any effect on each other. Looking ahead, the two groups certainly have similar problems. In each instance these problems arise from our very rapid rate of growth. Neither group can have a monopoly on easy solutions . . . there are no easy ones in sight.

Let's look at what has been happening in recent months. There was a real fueloil shortage last winter, and the newspaper publicity on the subject was impressive. It is well known that 95% of the actual hardship cases, where there was no heat in the house, occurred in the kerosene, range or No. 1 oil categories. The actual run-outs among the power oilburners, using No. 2 or 3 oil, were relatively few. In some cities of the central south, the oil companies might be apprehensive over their central heating oil customers, and they might have to spread out their supplies with an eye dropper, but you could hardly find in those markets any oil man that was completely out of No. 2 or 3. Yet you could find sizable cities where no oil company in the market had any kerosene or No. 1 for as long as a week at a stretch.

Note, however, that the publicity in the newspapers and on the radio always talked of the troubles with "fueloil" and with "oilburners." Almost never, except in St. Louis, did they call them space heaters or floor furnaces. Sales of power burners have been hurt considerably more than space heaters were hurt.

First quarter shipments of space heaters were off 18%; power burners were off 70% from last year. When people are worried about oil supply, it is hard to get them to spend $400 or $500 for a basement oilburner, but not nearly so hard to get them to take a chance with a $75 or $100 space heater, particularly when they know that they can put back the old coal stove temporarily if worst comes to worst.

Looking ahead to next season, there seems no probability of any trouble with having enough No. 2 or 3 oil. But, if space heater sales should continue to build up through the year as they appear to have started out, there is real probability of trouble, and some additional bad publicity. And if that happens, the power oilburner people will again be hurt worse than space heater manufacturers. So certainly the power burner people should have a high interest in space heater activities.

Then the two groups have a mutual problem on oil quality. For the past 20 years the need for fueloil has grown faster each year than has the need for gasoline. That will no doubt be true in the future, or at least for several years. Gasoline growth in normal times is pretty much tied to automobile expansion, which is relatively steady and slow . . . five or six percent a year. But fuel-oil and kerosene growth has hit a peak of 25% to 30% in a single year. It can't go on that way, of course, but it will stay higher than gasoline.

If we think of gasoline as being the top side of the barrel, the volatile part of the barrel, we must recognize that heating oil, growing faster than gasoline must continually push deeper down into the heavier parts of the barrel. The growth of space heater volume has slowly but definitely pushed the power oilburner fuel deeper in the gravity scale and the volatility scale.

Before the war the power burner people had a splendid fuel. It was 36 gravity with a lot of light ends, and you could ignite it very easily. Today it's 32 gravity, with lots of heat content, but difficult to ignite. In the new specifications, oil for power oilburners drops to 26 gravity as a minimum, and we may have to start the burner with a blow torch. Of course that oil will contain more heat per gallon.

### Push Down In The Barrel

In product development laboratories space heater men are designing equipment for heavier fuels; there has been quite a lot of complaint over the necessity for this, but we all know that it's inescapable. We know that as kerosene and No. 1 sales grow faster than the gasoline demand, it's necessary to push down into the distillates, just as the power oilburner designers are pushing down into the residual fractions. Last year residual oils, the No. 5 and 6 or bunker oils, represented 26% of the barrel. All of the new refinery capacity now being built places emphasis on cracking this residual share of the barrel, to eventually get down to less than 10% over the industry as a whole.

In designing equipment for heavier fuels, space heater men have a tougher problem than the power burner people, because they have to retain vaporizing capabilities, or else go to forced draft and electric ignition.

But space heater manufacturers, on the other hand, are in far better shape in that they are less hurt by bad publicity on fuel supply than are the power burner people.

# Finding Hidden Wiring Defects

## Case Histories of Breakdowns Related to Electrical Troubles

by

J. W. Schulz

IN A CLASS by themselves, for being tantalizing to the service man, are those service calls caused by a burner "going off on safety" every so often, perhaps once a week or perhaps only two or three times a year. The owner finds the house cold in winter, or in summer learns his summer-winter layout has stopped giving hot water. Re-setting the burner's safety device instantly starts the burner. The service man is summoned because the equipment broke down—plainly something is wrong and something should be done about it—but then the burner can be started a dozen or two dozen times without its misbehaving in any way. Everything the service man tests turns out perfect. But then, perhaps within two weeks, again the burner goes on strike in the same way and again it can be put to work only by re-setting the safety control.

Occasional "going off on safety" combines possibilities of mechanical trouble and electrical trouble. Almost anything electrical in the burner installation may be to blame; anything mechanical that can cause the flame to fail to light, or that can cause variations in the flame size, can be to blame. Completely baffled for the moment by a burner acting up in this way, a service man weak on electrical know-how often concludes that the breakdowns are continuing only because of the gaps in his electrical knowledge.

There are additional exasperating troubles which, to be handled with a show of confidence, also require a detailed knowledge of the electrical, as well as the mechanical, phases of burner installations. The following case histories bring this out. They show at the same time how in many cases the mechanical and electrical aspects are so interlaced that, in attempting to find the particular cause of a certain type of breakdown, a man inexpert in electrical matters can waste almost endless time on forced efforts to find a mechanical cause of trouble which actually is electrical in origin. Conversely, and as several of the case histories also bring out, the man can be so determined to find electrical troubles that do not exist that he overlooks related mechanical troubles.

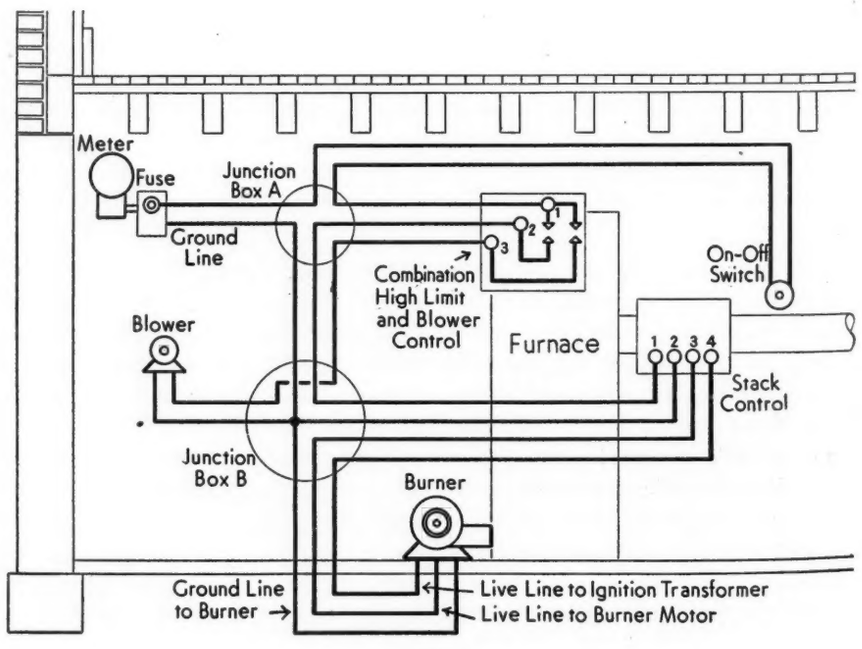
The first three case histories outlined below deal with installations wired as the accompanying diagram shows. This is the wiring on which a certain dealer standardizes for his furnace-type winter - air - conditioning plants. Two switches are shown in the combination furnace control. The one on the left is the high limit control of the burner. If the furnace tends to overheat, this switch opens, breaking the circuit between terminals #1 and #2 of the control, and cutting the 110-volt live line to terminal #1 of the oilburner stack control. The right-hand switch in the combination control closes, connecting terminals #1 and #3, when the bonnet temperature rises to about 120° F., and this starts the circulating blower which is part of the furnace unit. Terminal #2 of the stack control is ground or neutral; terminal #3 provides the live line for the burner motor; terminal #4 provides the live line for the burner's ignition transformer, as intermittent ignition is used. Actually, the on-off switch usually is installed at the top of the basement stairs instead of where the diagram shows it. The low-voltage room thermostat, wired of course to the stack control, is not shown. A point of particular interest, in this wiring, is the use of four wires from the stack control to Junction Box B, which eliminates the need to run more than one set of wires to the stack control.

### Power Failure Blows Fuses

Wired as shown in the accompanying diagram, this warm-air plant operated without trouble the first winter it was used, then in spring started blowing fuses. Heavier than 15 amp. fuses should not be used for the circuit made up of #14 wire, the service man reasoned, so on the two or three occasions that fuses blew, he replaced the blown 15 amp. fuses with new fuses of the same rating.

The real clue to the trouble, first disregarded, came when the owner telephoned that he had found out that following the failure of the electricity, which occurred rather often during spring lightning storms in the particular rural area, the oilburner fuse seemed to blow out. Finally acting on this tip, the service man diagnosed the trouble properly.

When the electricity went off for about 15 minutes while the burner was running, resumption of the current



started the burner motor and the circulating blower motor simultaneously. The burner started because the house still needed heat. The blower motor started because the furnace, hot when the current failed and lacking forced-circulation during the current failure period, was warm enough when the current came back on to keep the bonnet blower control switch in its "on" position. At no other time except after current failure, did the burner motor and the blower motor start simultaneously, for normally the burner was started first by the room thermostat and then the blower was turned on by the resultant increase in the temperature of the furnace. As the service man easily proved to himself, starting both motors simultaneously blew a 15 amp. fuse, but starting either motor while the other was already running did not blow this size fuse. In this instance, the trouble was ended by installing a 15 amp. K-E Thermofuse, which is proper for a circuit made up of #14 wire but which, being a time-delay type suitable for motor starting, properly permits more than 15 amp. to flow for a time interval long enough for the starting of a motor. This special fuse simply was screwed into the fuse block in place of the ordinary 15 amp. fuse used previously, and the trouble was ended.

### Burner Hums When Fan Starts

On another installation wired as the diagram shows, the owner complained that while ordinarily the burner ran quietly and smoothly, it seemed to go into a spasm of motor hum and choking flame noise when the circulating blower of furnace started. This happened every so often. In checking, the service man blocked the burner motor so that it could not turn, and kept the circulator blower running while he turned the burner motor circuit on and off; using the safety button of the stack control. Every time he gave current to the stalled burner motor, the blower motor slowed down, indicating a pronounced drop in its voltage. Terminal #1 of the combination bonnet control (see diagram) obligingly started to heat up at this point, indicating a loose connection in the line to both motors. Tightening the screw of terminal #1 ended the burner trouble, which had been caused simply by the starting of the blower motor drawing so much current as to reduce greatly the voltage on the burner motor and cause it to slow down and hum for a second or two.

### Fan Switch Contacts Burned

On a third installation of the same type, the service man tended twice to burned contacts in the bonnet control, which failed to start the circulating blower properly. Staying on the job for a while to puzzle out the reason for all the trouble with these contacts, he noticed the circulating blower started and stopped over and over again when it should have kept running continuously after the burner warmed up the furnace. Then he found that each time the blower started it cooled the furnace enough to throw the circulating blower control to its off position. With the blower off, the furnace picked up heat quickly and the blower started again. The flame size of the oilburner, to which he had given no attention earlier, was to blame. A plugged nozzle had cut the firing rate from 1.25 gph to, the service man estimated, less than .5 gph. Replacing the nozzle gave enough furnace heat to keep the blower motor running continuously after the burner had warmed the furnace, and ended the trouble given by the previously overworked blower control switch.

### Burner Motor Often Fails

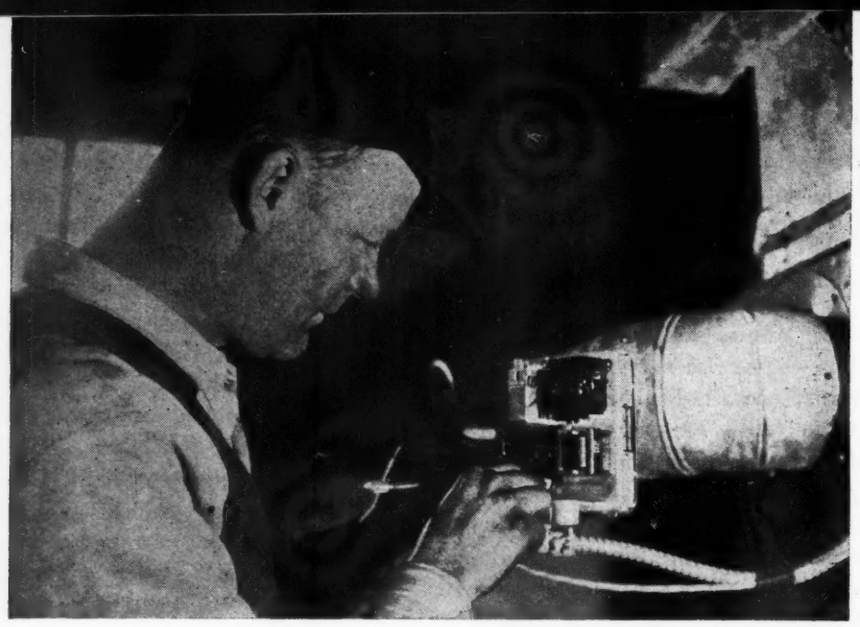
This exceptionally helpful burner owner, who lives in the suburbs near the service man, telephoned the man late one night and said his burner motor finally had given out. He knew because several times in the past month he had found the burner "off on safety" and occasionally the motor only purred when safety was re-set; to get heat, the owner reached in and gave the blower a push. Now the motor was dead altogether. Pushing the blower would not start it. The owner hated to ask this, but would the service man please drive to town and bring out a new motor? The service man did. Besides, taking the well-informed owner's say-so that the old motor was dead, he spent an hour putting a new motor on the burner. Then that motor acted badly about starting. When the burner main switch was snapped on, sometimes the motor only purred, other times it started lazily or with a series of jerks. Trying to start and stop the motor a dozen times with the cover off the stack control showed, finally, that the motor switch contacts of this control actually gave all the trouble. Sometimes they snapped together properly when the relay went to its "on" position, whereas other times they arced and spluttered. It took 15 minutes to clean and adjust the contacts in the stack control panel, but another hour to put back on the burner the owner's original motor which was, naturally, 100% healthy.

### Burned-Out Circulators

Four times the service man found a circulator motor burned-out on this new installation, and four times he put on a new motor and it seemed to run properly. He concluded that the motors must be defective; when they ran steadily for a few hours, they burned out. Checking in more detail on the trouble proved, however, that at times the impeller in the particular circulator tended to rub on the circulator housing and bind up the shaft. Actually, the motor proved capable of handling twice the load given by the circulator, but when the circulator shaft shifted position and rubbing of the impeller stopped the motor shaft, the motor burned out. That the motor was burned out by stalling, not by overload, was proved by the fact that its starting winding, not its running winding, burned out each time. Mechanical shortcomings in the circulator caused the trouble, not electrical troubles in the motors.

### Series 10 Control Abused

After greeting his new service man, visiting the home for the first time, this home owner pointed to a Type L165A M-H Aquastat and said the contacts in it probably needed dressing. They always arced and made the burner relay chatter, he indicated, and every time they did his old service man simply would file or sandpaper them. The service man's eyebrows went up, though, when he saw that two, not three, wires were connected to the Series 10 Aquastat. Next he saw that the stack control was not the Series 10 type; not made by Minneapolis-Honeywell, it had a two-wire thermostat circuit to which this Aquastat was connected. The long



series of service calls which this owner had been making was ended by installing controls which matched each other and which could work together without trouble. After some explaining by the service man, the owner stopped cussing out Aquastats because every so often their contact points need "dressing."

### Stack Control Needs A Slap

"I've certainly given that black box on the smokepipe an awful slapping around during the past heating season," a husky housewife told a service man with some satisfaction. "When the burner won't start, I haul off and give the black box a wallop. *That* starts it!"

New to the particular trouble, the man doubted this. But after six good starts, the burner balked. As waiting a good ten minutes was nothing but a disappointment, the woman volunteered to do her slap-start act. To the service man's astonishment, the relay and burner motor went into action like a horse given the whip.

Back at the shop without having made the job any better, the service man was told by an old-timer, "That's nothing but a lazy cold-start switch in the stack control. You've got to find a certain set of contacts which must be closed to permit the burner to start. These contacts close as the smokepipe chills. The trouble is they stick open when they're on the verge of closing. When that Amazon you're telling me about makes with her muscle on the stack control, she just knocks those contacts together by jarring the whole thing. Go right back and fix things up before she knocks off the smokepipe."

A bit of delicate bending of the metal arm which supports the "cold-switch" in this particular panel, which is obsolete but still widely used today, ended the trouble.

### Burner Stops on Safety

Firing 6.0 gph, this commercial-size pressure burner kept stopping on safety. Giving the control panel, wiring, and controls almost endless attention made things no better. Finally a man new on the job put a pressure gauge on the fuel unit. It read 100 lbs. He tried to raise the pressure, and could get it to only 125 lbs. Then he pointed out that, watched long enough, the pressure dropped every so often. That proves the shut-off valve probably is closing with the burner in operation, he explained, because either the fuel unit is weak or the nozzle output is just a bit higher than the fuel unit can handle dependably. Or the suction line might have a slight air leak, causing flame failure every so often.

Whatever the cause of the trouble, the remedy outlined by the new man on the job cured it. Simply switch to the next larger size nozzle so that the firing rate will remain high enough to carry the load, he said, and use 70 lbs. atomizing pressure instead of 100 lbs. His idea was to "give the breaks" to a fuel unit on the verge of working dependably, and on this job the theory seemed to work.

### Too Many Starts and Stops

Trying to end quickly the owner's complaints that the burner which fired a steam boiler started and stopped about 20 times an hour on cold days, a service man checked the differential of the thermostat and pressure control, then went after loose connections in the wiring. After a few hastily-completed calls, he chanced to call while the burner was doing its rapid starting and stopping, and found that the low-water control was responsible. After running an hour or two and getting up steam pressure, the burner stopped because the water left the boiler through the returns of the steam plant. As soon as the burner stopped, the waterline of the boiler rose, and the burner started again as soon as the stack control permitted. Corrections to the piping were needed to end the trouble.

### Circulator Runs All Night

"Although ordinarily it runs very little, on extremely cold nights the circulator runs continuously and I have to get up and turn it off in order to get some sleep," said the owner of a new forced-circulation hot water heating plant.

After a search for electrical defects proved fruitless, the service man talked to the owner some more and learned that it seemed the radiators did not heat properly when the circulator ran steadily. Air-binding of the mains of the hot water system proved to be the trouble. In this system, the air-binding was at its worst when the burner ran a great deal, therefore on coldest nights the air-bound mains heated the radiators poorly and caused the circulator to run steadily in an effort to heat the house. Taking the ups and downs out of the overhead hot water mains, and equipping the system with several automatic vent-valves of the type designed for hot water systems, provided the cure for the steady running of the circulator.

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In addition to indicating it is wise to listen to what a home owner says but not to jump to his conclusions, these case histories emphasize the importance of being familiar with the electrical, as well as the mechanical, aspects of modern oil-heating equipment. This is true almost always: When an installation which has been working properly starts giving trouble, one defect is to blame. The proficient and efficient service man buckles down to (a) locating that defect, then (b) eliminating or correcting it.

# Heating Oil Quality Trends

## Most of the Prewar Type Now Goes to Kerosene and Diesel Runs

by
Stewart H. Hulse*
and
John O. Collins*

THE QUALITY OF DOMESTIC heating oil since 1940 has been the topic of wide discussion within the petroleum and oil burner industries. Pessimistic statements have been published as to the influence of oils derived from the catalytic cracking process. Some of these statements have created adverse feelings by implying that catalytically cracked fuels are far different in burning performance from those derived from thermal cracking processes which had been used for many years prior to the advent of catalytic cracking.

It is the authors' view, based on extensive laboratory and field experience, that if catalytic components are segregated, processed, and blended with the same care and diligence that generally have been applied to the production of heating oils in the past, satisfactory results can be obtained with such fuels in the popular types of domestic oil burner systems.

Domestic oil burners can be divided into three classes differing in their sensitivity to fuel quality, which is a combination of various properties such as volatility, paraffinicity, carbonizing tendency, and sediment content. In order of increasing sensitivity these three burner types are:

1. Pressure atomizing gun type (high and low pressure).
2. Rotary wall flame type.
3. Vaporizing pot type.

All three types are sensitive to sediment, which clogs strainers and nozzles or control valves. This property, therefore, must be controlled by the refiner and protected by the marketer so as to assure the delivery to the customer of a clean fuel free from suspended dirt and sediment. The process in which the fuel originates does not have much bearing on this problem, except to the extent that certain fuels, by chemical change or by interaction of components, will produce troublesome sediments, if the components are not suitably refined.

### Pressure Atomizing Burner

As regards volatility, paraffinicity, and carbonizing tendency, the least sensitive of the three burner types mentioned above, the gun-type burner, gives satisfactory performance on fuels quite deficient in the characteristics mentioned. A major fault of most gun-type burners now in use is a short period of sooty combustion at the start of a burning cycle, when the oil pump delivers the full-rated supply of oil before the burner fan has come up to speed, and again during shutdown when the air supply decreases at a faster rate than the oil supply. The Esso Laboratories have found that the rate of soot deposit in a boiler is a function of the number of starts and stops in a given period. This is true even with a properly adjusted burner giving nominal smoke-free performance, although faulty operation and improper burner adjustment naturally add to the smoke and soot. Under Summer conditions, when a burner is operated mostly for hot water supply and the number of cycles is frequent and of short duration, soot deposit is likely to be greater than in the Winter when the burner is used to heat the home. This feature is mentioned in some detail because it is primarily responsible for soot deposit (causing some lowering in boiler efficiency) even when using relatively paraffinic oils in the order of 50 to 60 Diesel Index. Fuels of lower paraffinicity aggravate this condition to some extent. However, within wide limits the influence of paraffinicity is surprisingly small.

With the introduction, postwar, of devices such as quick cut-off valves, smoky shut-downs can be minimized. By means of a centrifugal clutch used on one make of burner between fan and pump to time the pump operation, the formation of soot both at the start and end of the burning cycle is minimized. This results in an increase in efficiency and a decrease in fuel consumption with the modern type of No. 2 oil.

The Esso Laboratories have been unable to determine any serious adverse effect of catalytic components on fuels suitable for gun-type burners, which predominate in domestic heating installations.

### Rotary Wall Flame Burner

Next in line as regards sensitivity is the rotary wall flame burner, which is more critical of fuel quality and demands a higher volatility fuel of higher paraffinicity, and lower carbon-forming tendency. The reason for this is readily explained. The fuel is projected against a hearth ring made of either metal or ceramic material, on which are mounted the ignition electrodes. When this ring is cold, the higher-boiling fractions of the fuel accumulate until the ring temperature is sufficiently high to vaporize the liquid fractions. If the fuel lacks volatility, the high boiling components remain for a longer time in the trough which forms a part of the ring, keeping the electrodes wet with oil which gradually decomposes and causes carbon deposit to bridge the gap of the electrodes, thus short-circuiting them. With low-volatility fuels, the heat generated at the start may be insufficient to actuate the safety controls and the burner shuts down even though the electrodes are still clean. The accumulation of the heavy fractions in the trough leads to a sooting condition when sufficient heat is liberated to burn this excess of fuel along with the quantity currently supplied by the burner. Thus, a fuel which is deficient in volatility, low in Diesel Index, and high in carbon residue will show relatively poor performance in this type of equipment.

In many important marketing areas major heating oil suppliers have leaned in the direction of making their house-brand heating oil suitable for operation in these rotary burners, because to carry a separate grade would have involved various complications, and dealers han-

*Esso Laboratories, Standard Oil Development Co.

dling a certain brand of heating oil wanted to be in a position to supply customers from one and the same tank regardless of the type of burner in use. The Commercial Standard CS-12-40 No. 2 fuel oil, calling for a 10% point no higher than 440°F., 90% point no higher than 600°F., and a carbon residue on 10% bottoms not over 0.15% was intended to be suitable for the rotary burners. Experience has shown, however, that a 10% point somewhat below 440°F. is desirable particularly in mild weather, and the record shows that in most instances the 10% distillation point of actual No. 2 fuels on the market was well below 440°F. Therefore, before the war burner requirements were easily satisfied.

With the changes in refining techniques during the war, and the postwar demand for kerosene there has been a decrease in volatility of No. 2 heating oil which now closely approaches the Commercial Standard in this respect, and some wall flame burners have had to switch to No. 1 fuel. This difficulty has erroneously been blamed on the presence of catalytic components in the fuel. If the catalytic fractions are distilled and blended to the volatility needed by the rotary wall flame burner as in the past and are refined to the same Conradson Carbon level, satisfactory burner performance can be assured.

### Pot Type Burner

The pot type of burner is supersensitive to fuel quality and for acceptable performance should really be supplied with a No. 1 or kerosene-type product unless mechanical draft is used.

The Esso Laboratories studied this subject at an early date and the results of the laboratory investigation disclosed that fuel source (whether cracked or straight run) had only a limited bearing on the performance of this type of burner. Fuel volatility, carbon residue and paraffinicity and burner draft conditions were controlling. For example, coke formation lined up quite well with the Conradson Carbon value on 10% residuum. For the same Conradson Carbon, volatility had a much more pronounced effect, while Diesel Index influenced the coke formation results to some extent. However, it was shown that improvement in paraffinicity alone was not enough to offset a deficiency in volatility.

As to sooting, this is directly related to the draft conditions prevailing in any particular installation. With adequate draft, a fuel deficient in volatility and of low paraffinicity will burn cleanly at a relatively high rate. For instance, with a draft of 0.05" of water, a No. 2 oil could be burned at only about 75% of the maximum heat output in the pot-type burner used for this set of experiments, whereas with a draft of 0.1" of water, clean combustion was obtained at full firing rate. Kerosene, on the other hand, could be burned at full rate with a draft of only .05". With few exceptions, these burners are not equipped with mechanical draft and the variations in available natural draft force the use of a volatile fuel such as kerosene or No. 1 fuel oil to minimize difficulties.

### ASTM Fueloil Standards

Having in mind that the new wartime refinery processes might affect the supply and quality of post-war fueloils, the Bureau of Standards (which issued Commercial Standard CS 12-40) solicited the advice of representatives of the petroleum and oilburner industries early in 1944 as to the desirability of reviewing the present CS 12-40 in the light of post-war fuel quality. As a result, the American Society for Testing Materials (ASTM) was asked through its Technical Committee E on Burner Fuel Oils to undertake a thorough program to determine what changes in fueloil specifications would be desirable in order to follow the expected trends in fuel quality while still protecting the performance requirements of existing and new oilburners.

As a start, the ASTM committee selected two Reference Burner Fuels. No. 1 was composed of about 25% catalytic distillate and 75% straight run, and No. 2 was composed entirely of catalytic distillate. These fuels were chosen not because the committee felt that they represented a forecast of immediate commercial competitive quality, but because they had minimum volatility and otherwise would reflect the minimum burning quality that could be foreseen in the light of the changed refinery processes. These fuels had the following inspections:

**ASTM Reference Burner Fuel**

| | No. 1 | No. 2 |
|---|---|---|
| Gravity, °API | 37.9 | 28.7 |
| Diesel Index | 52.0 | 33.0 |
| 10% Distillation Point, °F | 401 | 459 |
| Final Boiling Point, °F | 595 | 681 |
| Carbon Residue on 10% Bottoms, % | 0.06 | 0.39 |

Quantities of these oils were then distributed for test by various burner manufacturers and oil laboratories. Test forms and instructions were formulated so that all burner tests would be run on a comparable basis. All test data were kept confidential by appointing the Technical Secretary of the Oil-Heat Institute to receive the reports and to identify the various laboratories by code number. A total of 34 laboratories participated in this program. There were four general classes of burners, namely, high and low pressure atomizing gun type, wall flame rotary and vaporizing pot type.

Upon completion of the tests, the ASTM committee reviewed the results and reached the following conclusions which have been somewhat abbreviated for purposes of this paper:

a. The majority of the laboratories reported that neither the No. 1 or No. 2 Reference Fuel Oils, nor blends thereof were satisfactory for vaporizing pot-type burners.

b. The majority of the laboratories reported that both fuels and blends thereof could be burned satisfactorily in high and low pressure atomizing gun type burners, in some cases with minor modifications of combustion chamber or air adjustment, and that existing installations of wall flame burners may require some changes in hearth design to burn the No. 2 fuel.

The successful results of the tests with the most popular types of fully automatic burner showed that even these minimum quality fuels can be successfully burned. When it is kept in mind that competitive commercial quality can be expected to surpass that of these oils, there would appear to be little need for concern as to the future supply and quality of heating oils for these burners.

The test results with the pot-type burners confirmed that they are indeed much more sensitive to fuel quality than the rest, and cannot be expected to perform satisfactorily on other than special types of fuel. It has been customary on the East Coast to provide such burn-

ers with the best fuel available, usually range oil or kerosene, because with such a fuel the customer has the least difficulty with carbon and soot, and complaints are thus held to a minimum. In some cases, special light No. 2 fuels have been acceptable for pot-type burners and have been supplied. With No. 2 fuels generally tending toward lower volatility and gravity, they will become less usable in such devices.

These trends are recognized in a revision of ASTM Burner Fuel Oil specifications recently issued as D-396-48T (see Table 1).

While spot conditions may exist that will cause a relatively poor quality component from a certain catalytic cracking operation to be concentrated in a given batch of heating oil, or may result from a particularly severe catalytic cracking operation at a given refinery, it cannot be stated that in general poor quality heating oils are derived from the catalytic cracking process. Any degradation in burning quality of No. 2 fueloil which has taken place is properly attributable to the increased production of kerosenes (for pot-type burners), heating oils, and diesel fuels. In this connection, the following points appear worthy of note:

1. In former years, many No. 2 oils contained both kerosene and potential diesel fractions which resulted in high Diesel Index and a volatility well in excess of the 10% minimum at 440°F. prescribed by Commercial Standard specifications. With the large increase in demand for kerosene and diesel fuel, light fractions have not been available as heretofore for blending into heating oil, and consequently there has been a corresponding decrease in volatility and paraffinicity.
2. Contrary to thermal cracking, the fractions in the heavy naphtha range from catalytic cracking have high octane and therefore (except in emergencies) are completely stripped from the heating oil for use in motor gasoline. Consequently, the catalytic heating oil component is deficient in volatility.
3. In order to make up volume, refiners have been forced to include higher boiling components in No. 2 fueloil.

For all these reasons heating oils are now being produced of lower volatility than was formerly the case. The following trend confirms this. The average

TABLE I.—DETAILED REQUIREMENTS FOR FUEL OILS.[1]

| Grade of Fuel Oil[2] | Flash Point, deg. Fehr. | Pour Point, deg. Fehr. | Water and Sediment, per cent by volume | Carbon Residue on 10 per cent Bottoms, per cent | Ash, per cent by weight | Distillation Temperatures, deg. Fehr. | | | Saybolt Viscosity, sec. | | | | Kinematic Viscosity, centistokes | | | | Gravity, deg. A.P.I. | Corrosion, Copper Strip, 3 hr. at 122 F.[4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 10 per cent Point | 90 per cent Point | End Point | Universal At 100 F. | | Furol At 122 F. | | At 100 F. | | At 122 F. | | | |
| | Min. | Max. | Max. | Max. | Max. | Max. | Max. | Max. | Max. | Min. | Max. | Min. | Max. | Min. | Max. | Min. | Min. | |
| No. 1 A distillate oil intended for vaporizing pot-type burners and other burners requiring this grade of fuel | 100 or legal | 0 | trace | 0.15 | ... | 420 | ... | 625 | ... | ... | ... | ... | 2.2 | 1.4 | ... | ... | 35 | pass |
| No. 2 A distillate oil for general purpose domestic heating for use in burners not requiring No. 1 fuel oil | 100 or legal | 20[3] | 0.10 | 0.35 | ... | [5] | 675 | ... | 40 | ... | ... | ... | (4.3) | ... | ... | ... | 26 | ... |
| No. 4 An oil for burner installations not equipped with preheating facilities | 130 or legal | 20 | 0.50 | ... | 0.10 | ... | ... | ... | 125 | 45 | ... | ... | (26.4) | (5.8) | ... | ... | ... | ... |
| No. 5 A residual-type oil for burner installation equipped with preheating facilities | 130 or legal | ... | 1.00 | ... | 0.10 | ... | ... | ... | ... | 150 | 40 | ... | ... | (32.1) | (81) | ... | ... | ... |
| No. 6 An oil for use in burners equipped with preheaters permitting a high-viscosity fuel | 150 | ... | 2.00[6] | ... | ... | ... | ... | ... | ... | ... | 300 | 45 | ... | ... | (638) | (92) | ... | ... |

[1] Recognizing the necessity for low-sulfur fuel oils used in connection with heat-treatment, non-ferrous metal, glass and ceramic furnaces and other special uses, a sulfur requirement may be specified in accordance with the following table:

| Grade of Fuel Oil | Sulfur, max., per cent |
|---|---|
| No. 1 | 0.5 |
| No. 2 | 1.0 |
| No. 4 | no limit |
| No. 5 | no limit |
| No. 6 | no limit |

Other sulfur limits may be specified only by mutual agreement between the purchaser and the seller.

[2] It is the intent of these classifications that failure to meet any requirement of a given grade does not automatically place an oil in the next lower grade unless in fact it meets all requirements of the lower grade.

[3] Lower or higher pour points may be specified whenever required by conditions of storage or use. However, these specifications shall not require a pour point lower than 0 F. under any conditions.

[4] The exposed copper strip shall show no gray or black deposit.

[5] The 10 per cent point may be specified at 440 F. maximum for use in other than atomizing burners.

[6] The amount of water by distillation plus the sediment by extraction shall not exceed 2.00 per cent. The amount of sediment by extraction shall not exceed 0.50 per cent. A reduction in quantity shall be made for all water and sediment in excess of 1.0 per cent.

**Average Competitive No. 2 Fuel Oil Quality**

| | 1940 | 1942 | 1944 | 1947 |
|---|---|---|---|---|
| Gravity | 37.5 | 35.9 | 32.6 | 33.1 |
| % at 440°F. | 25.7 | 15.9 | 10.5 | 16.1 |
| Diesel Index | 55 | 52 | 43.5 | 45.3 |

competitive quality as regards gravity, percent at 440°F., and Diesel Index is shown for several years between 1940 and 1947 for No. 2 fuels marketed by eight major oil companies in the Newark, N. J. area.

Since, as explained above, pot-type and certain rotary-type burners depend upon volatility for proper performance, it is evident that the trend illustrated above, which shows a drop in both volatility and paraffinicity, was responsible for most of the experiences during the past few years, and not the introduction of catalytic distillates as such.

The burner industry in general appears to be aware of the trend toward heating oils of lower gravity and volatility and very likely is taking this into consideration in its design of burners for the future.

# Eugene Holman Sees Fueloil Supply Adequate

SPEAKING BEFORE THE National Press Club in Washington on June 3 Eugene Holman, President of Standard Oil Co. (N. J.), stated "Putting it plainly there is no crisis in oil . . . the need of present consumers will be met, and there will be a margin available for a reasonable number of new users. I say this while fully aware of the great amount of attention being given to supply difficulties, and also knowing that some people accuse me of being an optimist on the supply situation. I think there is a great deal to be optimistic about. Drilling activities are up 18% over last year, the country's oil production rate is getting higher week by week. Already it is 7% above the average for last year."

The most significant point about Holman's talk was not that he is optimistic, but rather that he expressed this optimism to some three hundred of the nation's top level journalists, columnists, and commentators. He told them in effect to stop writing gloomy stuff about the oil industry.

Several interesting thoughts were expressed in the question-and-answer period that followed the reading of the paper. Typical are the following: "Which source of synthetic fuels will be utilized first and when will these become important? . . . Natural gas is the most economic source today, even assuming a higher gas price than at present. Coal hydrogenation will come much later, and shale oil much later than that. Synthetics will not become important before about ten years because imports will easily take care of us up until then." "Is the Trans-Arabian pipeline essential to American oil availability? . . . It's the cheapest and most efficient way to get the Middle East oil, but tankers can do the whole job." "Will the change from gasoline to kerosene in planes jeopardize fueloil supply? . . . The industry has so much flexibility that it won't make much difference. Such things develop so gradually that the industry adjusts itself." "What about Russia's proved and potential oil reserve, and is production increasing? . . . The last real information was in 1939. We must assume strong growth since then, but under their present Government system, there is some question as to whether they can exert the necessary amount of effort. They are obviously now short as shown by their taking Romanian oil." "Can demands for fueloil next winter be met without rationing? . . . We expect all heating oil demand to be met." "How much additional refining capacity will there be in this country by next Fall? . . . Without quoting the exact figures, most oil companies have a little excessive refinery capacity. The Jersey has excess capacity. The total refinery capacity in the country is well up with oil demands and will apparently stay so." "Can fueloil be brought down to gas price? . . . It is largely a matter of geography, but over a period of time, all natural resource fuels must stay pretty well in balance."

## Krug Tells White House Will Be Enough Oil

DURING THE LAST WEEK of May Secretary of the Interior Krug in a report to the White House stated that while there may be occasional spot shortages in the coming months they will not be serious enough to call for Government controls.

The report contains supply and demand oil estimates for the fiscal year beginning July 1, 1948 as follows: Supply 6,523,000 Bbls. a day; Demand 6,453,000 Bbls. a day. A summary of Krug's report appeared in "Petty's Oil Letter" of Washington. The report further explains that these supply and demand estimates will stand up even though not all of the industry's steel needs can be met.

This new attitude on the part of Krug is at variance with his April report, given to the Congress in line with House Resolution 385. One sentence in that report had been "The installation of new oilburning equipment should be suspended except where the use of other fuel is not feasible, or to replace worn out or inefficient equipment."

The new report in mentioned oil-heating explains how the oil industry met the difficulties of last winter with a minimum of hardship cases. It further points out that fueloil supply next winter will be greater and that if the rate of increase in demand levels off as it shows signs of doing, relatively little trouble should be expected. It is praiseworthy that Krug could so change his viewpoint in the short space of a few weeks, and it is also apparent that he expressed a sincere view in each instance. Max Ball, Director of the Oil and Gas Division, and Consultant to Krug on oil matters, deserves considerable credit for the new realistic viewpoint.

## Dream House at Chicago Heated with Fueloil

MR. BLANDINGS' DREAM HOUSE, made famous in the book and moving picture, has been built at Chicago to sell for $35,000, and was opened to the public June 14.

The heating plant is an oilfired General Electric winter air conditioning unit installed by Arrow Petroleum Company.

# New England Oilheating Forum

## Papers on Delivery, Conservation, Builder Sales, Replacements

AT THE CONVENTION and Exposition of the Oil Heat Institute of New England one of the highlights was an Oilheating panel on the morning of June 10. Members of the group were Joe Collins of Frontier Oil, Buffalo, J. L. Minner, Shell Oil, New York, L. H. Hobson, General Electric Co., Bloomfield, N. J., and W. A. Matheson, Williams Oil-O-Matic, Bloomington, Ill. Robert Gray of FUELOIL & OIL HEAT was moderator. The principal paragraphs of the papers follow:

### Collins Outlines New Delivery Methods

THE OLD METHODS of delivering fuel oil, which were used by our predecessors in the oil industry, many of whom are still with us, were certainly a far cry from our present day methods.

Our industry's original system of having customers call when they needed fuel oil, and then making their suppliers deliver to all corners of an area was so costly, that when a system to operate on an elapsed number of 24 hours days was developed, we considered that we had reached the millennium. We were quite satisfied until our worthy competitors, the gas industry, developed the degree day method of expressing heating loads. However, we as an industry, have never been very slow to learn and soon we were using their information to full advantage.

There are several methods of applying Degree Day information to carry out successful oil delivery systems, and most of us are familiar with one or more of them.

I would like to tell you about the method we have developed in our own organization. We used a 100% Degree Day system quite successfully until World War II came along, and with it the rationing of gasoline and fuel oil. The problems of covering our area with reduced gasoline gallonage for trucks and trailers, as well as the reduced fuel oil rations of our consumers, was really the incentive which caused us to develop our present Degree Day and Zone Route System. It was originally designed to conserve gasoline, but we found that it so improved our fuel oil deliveries, that we have continued to use it.

At the time we first started, we thought that if we could use Tractor-trailers for domestic deliveries and arrange zone routes according to Degree Day demands, so as to use our re-load stations throughout the area to best advantage, we would reduce our gasoline consumption. In use this system worked out so well, that we made further studies and ended up by installing it permanently.

In operating in this way, we obtained our zone route groupings in accordance with the following example: To arrive at a zone routing group, we considered our existing 400, 500 and 600 Degree Day cards in this manner. We reduced the 400 Degree Day reserve of about 75 gallons to a reserve of about 35 gallons. This, on a 275 gallon oil storage tank, gave us a working gallonage of about 240 gallons. Applying a 2-K factor for 400 Degree Days to the 240 working gallons placed the next delivery at 480 Degree Days. We left the 500 and 600 Degree Day cards set up as originally figured, and gathered the three Degree Day categories into one group, for routing by zones.

Our studies of the use of this method showed that the decrease in gallons per delivery on the original 600 Degree Day group, was compensated for by the increased gallons per delivery on the original 400 Degree Day group, which as I mentioned before, was increased to 480 Degree Days.

Collins

The increased efficiency we obtained by using this grouping method was reflected in the cost per gallon delivered, it amounted to a material saving, a saving of about 35%.

The better efficiency we obtained increased the delivery capacity of our fleet, and has given us complete control of our increased business in the area without disrupting our Degree Day zone routing. It has reduced our cost per truck mile. It has reduced manpower requirements. It has increased the number of stops per hour, while keeping our average delivery per stop approximately the same as it was when we used the 100% Degree Day delivery method.

#### Good Operators Necessary

This system to be successful in operation, must be handled and supervised by efficient and capable personnel. It is necessary for dispatchers to use good judgment in anticipating needs over week-ends or holidays. It is also necessary that good judgment be used in regrouping as business increases.

I am very happy to say that run-outs on our regular Degree Day customers are very, very few and far between.

All of our customers using fuel oil for central heating are on automatic Degree Day delivery, except special accounts consisting of small plants which have processing loads in addition to their heating demands, and C.O.D. accounts. Such accounts must give us 24 hour notice to obtain delivery. Deliveries to these types of customers are worked into the day's routing as they come up. We use the addressograph system to make out our route sheets on domestic central heating deliveries, and have full information as to tank capacity, or unusual conditions pertaining to the delivery, stamped on the route sheet so that any new driver will know how to handle that particular delivery. A numbering device used in this operation, places the customer's delivery ticket number opposite his name on the route sheets. The delivery information carried on the second line of the addressograph plate, is blanked off when the delivery tickets are run through the addressograph machine. The ticket naturally carries the same number as shown opposite the customer's

name on the route sheet for the day. We now use all tractor-trailers, except three straight jobs to handle the restricted areas.

In regard to our method of delivery to vaporizing space heater accounts, these customers usually take their deliveries in 55 gallon drums or 100 gallon tanks, rather than the conventional 275 gallon storage tank. We became interested in that field and believe it or not, are finding it profitable to make direct deliveries to some 20,000 accounts of that type. We studied the problems for some time and developed a method for handling these accounts which at the present time, consists of having the customer call in 24 hours in advance, to advise us of their need for delivery. These calls are taken over the telephone or from post cards we furnish our customers, which they mail in to us. The phone calls and card requests are all grouped into zoned areas as they are received, and are sent out over the teletype to the dispatcher's office. There they are received on his machine in the number of copies he needs for his use. One of these copies is given to the driver who operates in that particular zone, the following morning.

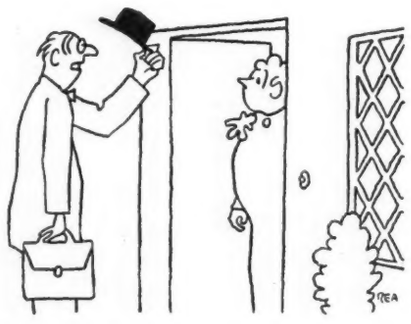
Our zone delivery system for vaporizing space heaters cost less to operate in 1947-1948 than our non-zone system in the season of 1943-1944, in spite of greatly increased costs of labor and incidentals. We use straight trucks on this type of delivery.

Several years ago we established a precedent by refusing to accept residual fuel oil accounts that required truck or tractor-trailer deliveries, unless they had installed or were willing to install tankage of sufficient capacity to permit the use of a volume of oil equivalent to the capacity of a full transport load, and still leave sufficient reserve to operate for a reasonable period of time so as to eliminate the necessity of emergency deliveries in order to keep the customer in operation. Time has proven that this practice has proved satisfactory both to seller and consumer.

We operate a total of 79 trucks during the heavy winter season. All of these trucks are loaded at night and are ready to leave in the morning, as soon as the driver is given his route sheet. The drivers of trucks delivering to domestic central heating consumers start to work at 7:00 A.M., and the range oil drivers at 7:30 A.M. All trucks of each group are out of the yard and rolling in fifteen minutes from the time the drivers punched in.

All of our domestic central heating accounts, and our vaporizing space heater accounts are handled efficiently as to delivery procedures, by three men in our central dispatching office, one dispatcher in our Niagara Falls sub-offce, and three girls in our Order Department. I mention this because it emphasizes what can be accomplished by making a real study of your own delivery problem, and doing something about it.

I would like to state my personal opinion, that in today's fuel oil market, and the future market, it is, and will continue to be essential to increase consumer storage facilities. For the past three years we have installed 275 gallon storage tanks only on burners consuming up to one gallon per hour. We have insisted on at least two 275 gallon tanks on any heating load beyond that range. The same practice has been established proportionately on small commercial accounts. I think our overall industry, and by overall I mean equipment dealers, manufacturers and oil suppliers, must get behind a similar practice if we are to avoid future distribution difficulties. I would also like to stress the necessity of installing fill and vent lines in a manner that will permit rapid filling.



"Good morning, Mrs. Wilgus. Is the lapsed policy at home?"

# Minner Sees Conservation as Education, Not a Threat

I WISH THOSE WHO THINK the oil heat industry is in mourning because of the supply situation could see the exhibits at this show and "get the feel" of this all-New England crowd. If this convention is any criterion, your industry is a lively and optimistic one. I am happy to see it emerge from the confusion of the past few months with such a healthy outlook on the future.

We are all acquainted with the regrettable misunderstandings which have developed between a few burner manufacturers and dealers and a few oil suppliers during the past season. Each group has shifted responsibility to the other for headaches suffered by both industries because of the fabulous demand for petroleum products. I feel that both groups are somewhat to blame. Certainly the tremendous oil-heating expansion of 1947 was the result of public demand, rather than over-active merchandising by burner firms. And on the oil industry side, certainly an all-out effort was made to take care of the oil-heating public once its full needs were known. Because such misunderstandings exist, however, it is a good thing to get together as we are doing here today, talk over our mutual problems, and clear up some of the postwar fog that still confuses us.

My subject today is conservation, a shopworn subject familiar to all of you, but still timely and important. Last winter some skeptics maintained that you could not get the American people to conserve anything in peacetime unless you persuaded them by force through government regulation. The oil industry discovered otherwise. A spot check of direct accounts in one of our marketing divisions, towards the end of winter, disclosed that 82 per cent of our customers had cooperated in the conservation drive. Making adjustments for differences in degree days, we found that net savings of fuel for January over December amounted to 9.6 per cent, and for February, 13.4 per cent.

A new York City official recently reported that the city's public school system had reduced its fuel bills by $2,628,676 in six years, despite rising prices and extended use of buildings during this period. He attributed this remark-

able saving to a conservation program inaugurated back in the winter of 1940-41, and still in effect.

Minner

I am sure that most of you can cite similar case-histories proving beyond a shadow of doubt that conservation works. While the conservation drive last winter proved successful in saving fuel, however, I think the campaign also created many dissatisfied customers—because it was based principally on fear. "If you don't save oil, you are going to be cold." That was the implication underlying some of the industry's ads, and literature last year. "If you don't save oil, the industry will be unable to spread supplies sufficiently to take care of every oil-burner owner."

I think it is time to stop trading on fear as the motive for making conservation work and, instead, launch a solid, constructive program. We want people to enjoy our products, we want them to like the oil business, and it is impossible to attain these objectives if we constantly "scare them." Let's use conservation to create happy customers—customers who will feel inclined to praise the oil and oil-heat industries.

We can do this by stressing the money-saving factor involved in conservation, by convincing people that a little money spent for various repairs, and fuel-saving devices, can save them substantial amounts on their fuel bills. Seldom will your customer become irritated when you endeavor to show him how to save money. Naturally, if a homeowner is kept in a perpetual jittery state about the supply of his heat—one of the prime necessities of life—he does become irritated and dissatisfied.

Last year the heating season was well along before intensive, conservation programs were organized. Forward-looking companies are not making the same mistake in 1948. We, at Shell, started a constructive conservation campaign in April. At that time, we sent a letter to our accounts thanking them for their cooperation during the past winter and pointing out three steps that they can take now to conserve oil next winter.

The first of these was: "Have your entire heating system surveyed for recommended improvements."

The second: "Have your burner completely overhauled, adjusted and cleaned by a competent oil burner service mechanic."

The third: "Have the soot and scale deposits removed from the heating surfaces of your boiler, or furnace."

We deliberately confined the program to these particular points to keep it as simple and inexpensive as possible, to lead our customers into making small expenditures which would result in important fuel savings. All of us know that savings amounting to as much as 20 per cent of the fuel consumed can result from simple repair jobs on the majority of burners now in use.

The letter I have just mentioned was the first of a series of letters which will keep our customers posted on the supply situation as it develops, and promote conservation.

Starting with early fall, we expect to launch an extensive campaign on thermostat settings, the phase of the conservation program that proved most effective last year. By getting the program underway in September, instead of at Christmas time, the industry should achieve even more satisfactory results in the coming season, than in 1947-48. Here again, we plan stressing the money-saving factor, not the fear factor, by pointing out that 10 per cent, or more, can be saved on heating bills simply by not overheating.

### New For Old

More important to burner dealers than any other plank in a conservation program is the replacement of the obsolete, and inefficient burners now used in many homes. We all realize a large potential market exists in the replacement field, but dealers in many localities have been handicapped in their efforts to handle it by unfavorable publicity on oil supply. I regard it as the petroleum industry's duty to restore public confidence in oil supply sufficiently to prevent oil burner replacement campaigns from miscarrying. Satisfying this market will mean highly effective conservation of fuel oil, and I am sure that dealers who actively go after this business will find that their suppliers will support them 100 per cent.

We, at Shell, have already taken steps to bolster our customers' confidence in next season's supply. I quote from a letter that our marketing divisions have just mailed to their accounts: "We are happy to inform you that the prospect for fuel oil supplies has improved, and barring a greatly expanded military demand, or some unforeseen difficulty, we expect to have enough fuel oil to meet your demand. It is still most important, however, that we conserve oil. Old, inefficient burners, of course, waste fuel. If your burner needs replacing, present forecasts of supply certainly justify your installing a new one now."

I am happy to note that replacement sales in New England seem to be holding up well. First quarter sales in this category totaled 5,287, as compared with 4,949 conversions, and I hope that you can continue to sell a substantial volume of replacement units.

### How Many Can We Sell

This brings up the question: how many more burners can you safely sell during the next few months, over and above replacements? Nationwide, I think we can expect a supply of eight or nine per cent more distillate fuel during the next 12 months, than during the past season. Basing its calculations on this or a similar forecast, the Oil Heat Institute of New England has estimated that five hundred thousand oil burners, including orders for both new and replacement units, will be installed this year, and that more than sixty-five thousand of this number will be installed in New England homes. This sounds like a realistic estimate to me.

Each of you, individually, might as well forget about nationwide estimates, because national and regional statistics will have only a limited meaning, if any, in your locality, or in any locality. There will be more than 8 per cent additional fuel available in some areas, and less than 8 per cent in others. Each of you must ask yourself the question—how many more burners can I safely sell in 1948—and you are the only one who can answer that question. You will have to base your estimate on the maximum volume of heating oil your supplier, or suppliers, inform you they expect to deliver to you. Once you know your available supply, and have pro-

vided for business to which you are already committed — your present customers — you can use the remaining quantity to cover new oil burner installations. Your estimate will also depend on the success of the conservation program in your local area.

If you oversell your supply, the problems will start accumulating once more with the arrival of fall. And you know as well as I do that none of us can afford to have next winter's experience duplicate that of last year. To make this point perfectly clear, let me quote from a recent report of the House Armed Services Subcommittee, sometimes known as the Short Committee: "Within the next six months the government must determine whether present efforts on the part of the government, and industry, to persuade the consumer to conserve oil will be adequate . . . If present trends continue, if, in other words, the voluntary program gives evidence of failure, rationing must be imposed." The complete report fills several columns of type, most of it in similar vein.

### Erroneous Statements

Now I disagree emphatically with the conclusions of that report, but there it is, a sample of the kind of thinking that is going on. Although the oil industry has an unmatched record of growth, accomplishment, and service to the consumer, the threat of government control has been raised. There is the challenge. Making conservation work is one way we can meet it.

I want to compliment the Oil Heat Institute of New England on the program it has undertaken to accomplish just this. Your current advertising campaign, under the headlines, "Good News on Fuel Oil," and "Oil to Heat More Homes," is timely and constructive and should prove extremely helpful in furthering the growth of the oil heat industry in this area.

While the oil industry is expanding at an unprecedented pace to meet the demands of millions for more and more oil, there is no reason why fuel oil jobbers and distributors cannot grow along with it. That's the way we at Shell want to see it because we believe in the oil heat industry as strongly as you do. I want to repeat a few words of caution, however. Don't oversell your available supply. Grow sensibly, promote conservation on a constructive "no-scare" basis that will keep your customers satisfied, as you are doing in your current advertising, and all of us can look forward with confidence to a healthy and prosperous future—a future where there will be fewer "don'ts" and ample opportunity for everyone to take on all the business he can secure in a competitive market.

# Builders Help Sell Burners Explains Hobson of G-E

WHEN I WAS asked if I would talk to you about speculative builder sales, I asked in turn for suggestions. It was then requested that I cover two subjects, first, how to sell heating equipment to the speculative builder and second, how to make money at it. I think perhaps I should try to spend most of my time on how to sell the speculative builder and perhaps someone else will volunteer to tell you how to make money at it.

In planning any kind of a sales program, it is wise to first analyze the thinking of the builder. We might even try to analyze some of his confusion! The Speculative Builder acts as a coordinator. He must coordinate the work of the architect, or the designer. He has problems in his financing which include the mortgage, the insurance, and the title. He must itemize all his items of cost and set a sales price. He must purchase his land, work with a surveyor to subdivide it into lots, and then plan his utilities, including water supply and sewerage. Once this is all done he then has the problem of the house. This includes excavating, foundation, waterproofing, rough-grading, back-filling, carpenters, lumber, insulation, plumbing, roofing, hardware, heating and about ten other major items. When you talk to the builder about heating, you are just one of the aches in a long list of headaches. You're just another subcontractor trying to get some business. To the builder, perhaps to your surprise, heating is not the most single important thing about the house. Why? Because it is not too important in the mind of the prospective purchaser of the house.

The builders have had a sellers market on houses. F. H. A. have been conservative in their evaluation and the builders are trying to reduce costs. They must build low cost houses if they are to stay in business, and also they are afraid of a change in evaluations and prices which might leave them with some houses they would have to sell below cost.

You all know the old sales stunt we all used before the war of breaking down the purchase price to the retail customer. We would not say $300.00 for the complete installation. We said, $30.00 down and only 25¢ a day and you get the freedom from drudgery, wake up to a warm house, etc.

The builder reverses this time-honored sales strategy. Suppose you have bid on 1,000 houses and a competitor underbids you $3.50 on a house. Does the builder break that $3.50 down over the period of the mortgage and tell the customer that for 1¢ per day additional he can have your burner? He does not; he pictures himself at the wheel of a new Cadillac with the $3500.00 he saved by buying your competitor's unit.

There are dealers who understand and like builder business and make money at it. But they specialize in it. I know very few dealers who are successful in both the builder business and the retail, or one to a customer jobs. Builder business is one of low overhead, low gross margin, and a large volume. You cannot pay a 10% sales commission on builder business, you may not have much more than 10% profit in the whole transaction. You cannot charge the overhead of a beautiful showroom and big advertising campaign against builder business, your competitors won't let you. The most successful builder heating contractors have small organizations for sales, no showroom, but the know-how to install complete heating systems at the lowest possible cost.

To you who are in the retail business, the builder business offers some advan-

tages. Every house is a showroom, hundreds of people go through the sample house in a new development. You get advertising at no cost. You build up revenue for your service department. Retail business is seasonal. Builder business is more of a year-round business, or at least installations will generally be made at a more constant rate over a longer period of time. If you get a development, you can plan your work ahead, and sandwich in the retail installations and summer service work. Once you have established relations with the builder and proven yourself, you can get repeat business with not too much sales effort. And last of all, if the equipment you sell is of not too high a quality, and if you live long enough, you should get first crack at replacing the units you installed originally. One more thing—you are sure to develop a more efficient organization. You will learn how to save time, how to reduce costs. You better had—if you want to stay in the builder business.

Hobson

How do you go about getting builder business? If you call on a builder whose business you have not had, and you submit a price, the builder will undoubtedly tell you that your price is too high. You may actually have submitted the lowest price he has received. This does not mean the builder is giving you the old one-two. He means your price is too high for what he thinks you are offering. The builder must have subcontractors on whom he can depend. If you miss schedule on roughing in, the builder is delayed and it costs him money. He wants a heating contractor that he can call on the telephone and say "Joe, three houses at Vine Street are ready for roughing" and then proceed to forget all about it and know that they will be roughed in. You can probably hold a builder's business by giving this kind of service, but just to make sure, you had better follow the jobs yourself and rough in without being called.

What are the trends in the way builders buy heating? The smaller builder, 100 homes or less per year, will probably continue to let a sub-contract on a complete heating system to one concern, or he may let the duct work or radiation and piping to one concern and let a separate contract for the furnace or boiler burner unit. Several of the larger builders are now setting up heating departments within their organization, and are performing all of the functions of design and installation, and are buying their equipment directly from the manufacturers.

Before the war it was common practice for the heating contractor to install the radiation, piping and a coal boiler, and for the oil burner dealer or oil company to install the conversion burner or tank. Today people are more conscious of heating costs, and insist on a boiler burner unit designed for oil. This means that the oil burner dealer must sell and install the boiler and, in some cases, he may install the complete heating system.

When a heating contractor installs the piping and radiation and the oil burner dealer the boiler, each on a separate contract with the builder, there is a split responsibility. If the back bedroom does not heat, it is easy to find out why. Either the radiator is not large enough, the piping is not right, or the boiler is not large enough, and the responsibility can be assigned either to the heating contractor, or to the man who furnished the boiler.

This is not true with a warm air system. When the back bedroom does not heat, the builder calls in the dealer who sold him the furnace. The dealer tells him the dust is not large enough. The builder then calls in the sheet metal man who tells him that the fan in the furnace simply does not have enough "push 'em." Probably the job could be corrected either by a larger duct or by a higher pressure fan, so who pays? Here it is customary to follow the principles of taxation. Who has the greater ability to pay? In any event, it is not a happy situation and wherever possible the builder should let the contract for warm air heating including ducts and furnace to one concern.

We might spend some time on gas competition. The gas industry has done a better job than the oil industry in the speculative builder business. The gas units, in order to obtain A.G.A. approval must meet certain requirements of efficiency and quality. The gas utility insists on certain installation standards plus certain construction standards such as insulation, storm windows, etc. The result is that most gas installations are of a higher quality and most houses in which gas is installed have a lower heat loss. Before the war, in the areas where natural gas was available, very few oil jobs were installed in new houses. In the manufactured gas areas, the cost of heating with manufactured gas was generally more than double that of heating with oil, so oil has generally been preferred to manufactured gas. The price of manufactured gas has increased, but not as much as oil, and with the more efficient equipment, plus a better constructed house, the total cost of heating with manufactured gas in a small home is not much greater than with oil. If oil is available and gas is not, you have no worry, but this condition won't be for long. It then appears that the oil industry must follow the lead of the gas industry on quality of equipment, quality of installation and house construction, if it is to install oil heating in the new houses. We all know that new houses establish the trend for replacement. If a man is burning coal and decides to install automatic heating, he talks with his neighbors and friends, he also looks at the new houses being constructed just as you look at new models of automobiles to see what is new and different. If he sees gas being installed in most of the new houses, he concludes that it must be the most modern fuel and he, therefore, installs gas in his own house.

From the end of the war up to now the builder has had a sellers market, but it has changed in many areas and will change soon in others. The builder

"I don't quite know how to ask the old boy for a promotion- my next move would be into his job"

will have a buyers market, he will have to sell his houses in competition with other builders. He will need additional customer benefits, additional advantages over his competitors if he is to sell his house at a profit. Whether these additional advantages are modern and efficient oil systems or a modern kitchen including dishwasher and garbage disposal, or automatic washer, depends upon the type of merchandising job that is done by the oil heating industry to make the prospective homeowner want and demand oil heating.

# Matheson Says Replacements Bless All Parties Concerned

IF EVERY MAN in the industry could strike oil in his own community, he would probably feel that he had the world by the tail. Yet a well-planned, vigorously promoted replacement drive can—to all intent and purpose—achieve practically the same result as striking oil in your own community.

In 1945, the oilheat industry made 29,847 replacement sales or 20.5% of the year's total. A good start, certainly, in catching up with the estimated backlog of 176,300 replacements—the result of inability to secure the necessary burners for replacement sales during the war years.

In 1946, replacements accounted for but 8.03% of the year's total—in 1947, only 6.65% of the year's total.

Yes . . . the postwar replacement market has been neglected. But now—this very summer—is the time to do something about it. For two very good reasons:

*One:* The replacement market is the only flexible phase of today's oilheat market. Your replacement sales can be as large—or as small—as you make them.

*Two:* When you go out after replacement sales, the team is on your side. Both the oil and oilheat industries are in complete harmony on the present and long range value of replacement sales to both industries and the public we both serve.

Mr. J. L. Minner, of the Shell Oil Company, had this to say at a meeting of fueloil distributors in Asbury Park, New Jersey, on April 30, 1948: "This replacement market should be reopened quickly. The petroleum industry should reassure all present owners that sufficient heating oil will be available for their needs. The entire industry has everything to gain by getting behind the replacement program. Replacement of inefficient burners means effective conservation of fueloil. If the dealer discovers that a potential replacement customer is doubtful about receiving fuel, I am quite sure that dealer will find his supplier more than happy to step in and back him up 100 per cent."

Passage of time has shown that Jack spoke with even more of his usual wisdom and foresight on that occasion. His words marked the beginning of a trend toward a healthier, happier mutual respect between the oil and oilheat industries.

Now . . . which oilburner is most likely to be a good candidate for replacement? Is it the one we seem to think of first—the old clunker? Let's look at the facts.

In a pre-war study, covering a ten-year period, FUELOIL & OIL HEAT reached this conclusion:

Replacement sales are more closely related to income level than to age of burner.

Let me cite but one instance that proves this point. In February, one of our dealers made ten replacement sales. Out of the ten burners replaced, only two were as old as 10 years. One had been installed in 1944. And seven—yes, seven of the ten—were postwar installations.

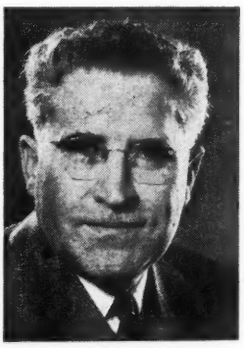
Apparently, then, it is not the oil clunker which is our first candidate for replacement. An increasingly cost conscious public is just as anxious as we are to replace the burner in question—the fuel waster.

Since income level has a direct bearing on replacement sales, what is the current dollars and cents picture?

"U. S. News & World Report" in its June 4 issue sums it up this way: "People have more and more money to spend and they are in a mood to spend it, in a mood to satisfy wants that keep growing as incomes grow. Under $3,000 there are about 2,500,000 fewer families than a year ago. Over $5,000 of income is being enjoyed by an added 2,500,000 families."

And *Newsweek* magazine for June 7 adds this bit: "Even more startling is the increase in dollars available for non-essential spending. After paying taxes, laying aside essential savings, and paying bills for food, clothing, and shelter, consumers in 1940 had only $22,800,000,000 left over for free spending. This year they will have about $90,000,000,000."

Please don't misunderstand. The money is there! Yes. But the public isn't going to come in and take those replacement jobs away from us. Let's face this one fact. We're going to have to sell 'em!



Matheson

In 1941, a survey showed that 21.6% of home owners with automatic heating had equipment over five years old. And, of these owners, 93.3%—93.3% mind you—had not even considered replacement. They had not been asked to consider replacement. Because the industry insisted on thinking of replacement in terms of age of the burner rather than income level.

Of the automatic heat users covered by this same pre-war survey, 65.7% had no idea what a replacement job would cost. Nothing has happened since which could be expected to improve this situation.

On every side, today, is abundant evidence of the crying need for a two-fisted, all-out selling job on behalf of oilheat.

Waiting for the best that is in us, is the rich, responsive—but almost neglected—replacement market.

The challenge of "More heat per gallon . . . fewer gallons per season" must be accepted by both the oil man and the oilheat man. Today, there is no such thing as a cheap, unimportant by-product in the petroleum world. A vast

petroleum economy is making greater and greater demands for every drop in that barrel of crude. It is up to us—all of us—to accept responsibility that goes with use of a valuable natural resource. Fewer gallons per season is part of that responsibility .We share it together. Replace! For the good of your customer, as insurance for your future, for the good of your industry.

The public *wants* oilheat! And the man who has it wants to *keep* it! As Bob Gray pointed out in one of his talks, people who went into the depression of the '30's with oilheat, kept that oilheat. If we do the right kind of a fuel-saving, replacement job today we can hold the loyalty and preference of the largest, most enthusiastic owner group in the oilheat world.

During this past heating season, consumers voluntarily reduced their fueloil consumption at a rate of about 9% compared to their earlier habits. We can do even better—with a competent, conscientious, conservation program based on replacement of wasteful, inefficient, unsatisfactory equipment. And this would include those cases where burner and boiler or furnace and burner are mis-matched.

### Replace With Units

Wherever possible, let's replace with units—boiler-burner or furnace-burner units. In the conversion job, the oilburner is engineered to a boiler or furnace not necessarily designed to burn oil. While the unit is design-engineered with burner and boiler or burner and furnace balanced and integrated into a complete heating plant.

Because high efficiency is engineered into it, the performance of a unit is not affected by local conditions. Chimney and radiation losses are held to a minimum. No on-the-site engineering is required, other than connecting the unit properly to the distribution system.

Just as the completely insulated home represents the ultimate in heat-saving, the boiler-burner or furnace-burner unit represents the ultimate in fuel-saving.

Let's put some of that virile, old-fashioned sell into our replacement story . . . in fact every phase of our oil heat activity.

The mention of a $30 or $60 a year fuel-saving, for instance, may not strike an immediately responsive chord. But . . . let's consider that $30 and $60 for a moment. Do you realize that a saving of $30 a year is the equivalent of a 6% return on an investment of $500? And that $60 is the return—at 6%—on an investment of $1,000. Watch your replacement prospects sit up and take notice when you talk about fuel-savings in terms of return on investment.

There's a job to do, men. A big job . . . a vital job . . . a replacement job.

Oilheat is America's most wanted automatic heat. And oilheat has a brilliant future. But . . . we shall not inherit that future. We must work for it.

For some of us whose memories of oilheat cover quite a span of years, this past winter and the ensuing months have been quite trying. However, once we rationalize both the undue exuberance born of unprecedented postwar demand and the equally undue pessimism born of the tight oil situation, we see that oilheat is just about on its postwar schedule. Oilheat sales, this year, are expected to total somewhere between 500 and 600,000. Only by comparison with last year's nearly 880,000 installations could the expected 1948 total be considered unsatisfactory. Because the most optimistic wartime predictions pointed to 1948 as the industry's first 500,000 year. Yes . . . even at its seemingly subdued 1948 rate . . . oilheat is still an industry of destiny.

The fullness and richness of that destiny is in our hands. Each of us has an active, aggressive, important role in this job ahead. Our greatest reward will be continued public confidence in oilheat. Oilheat is America's most wanted automatic heat. Let's keep it that way!

## New Underwriters Changes Expected Shortly

PRIMARILY THROUGH the efforts of O.H.I. and specifically Ted Kaufman of O.H.I., the Underwriters Laboratories' standards for oilburner installations are about to be modified to eliminate some requirements that had been bothersome to oilheating men.

The National Fire Protection Association, at its recent meeting in Washington, accepted the new standards with two minor exceptions which are being modified.

One of the outstanding improvements in the new standards will be the elimination of the three-way valve requirement, when two tanks are installed indoors. Certainly that is a desirable move, particularly now when the industry is doing its best to sell additional storage. It is expected that the new standards will be applicable before the end of the summer.

## Natural Gas Supply to East Largely for Enrichment

WHEN, AT THE END of May, the Federal Power Commission approved a 150,000,000 natural gas pipeline from Texas to the New York area, oilheating men naturally were a little disturbed. The line is to be completed by the end of 1950.

Discussions with gas men in the New York area show that the oilheating industry has little cause for concern since the natural gas is to be used in the manufactured gas plants to take the place of the present enriching oil. In other words, the natural gas will displace about 15,000,000 Bbls. annually of fueloil now being consumed in the gas plants. Apparently there is no intention of raising the Btu content of the gas from the present 540 level, and certainly no intention of reducing the gas price. It is probable that eventually there will be enough natural gas lines to the East to permit blending to get a mixed gas of around 800 Btu level, as is done in some Midwest cities, but that seems quite far off at the moment.

## Petition Albany Council For Larger Inside Tanks

PETITION has been submitted to the Common Council, Albany, N. Y., to approve an amendment to the City Building Code to permit larger fueloil storage tanks in one- and two-family houses, without requiring the tanks to be walled with brick. Present code provisions permit a single 275 gallon tank in the cellar of a home, but require that an additional 275 tank or a 550 gallon tank be enclosed with brick.

The amended code would permit two 275's or one 550 tank to be installed in the cellar without covering. The request was made by a group of fueloil dealers who called on Albany's Mayor Corning.

# Controls For Two Furnaces

AN OHIO ENGINEER tells this tale of ending the trouble given by two warm air furnaces which heat one large house.

Two winter air conditioning units rated at 2.0 gph and fired 1.5 gph were installed because a 4.0 gph unit could not be obtained quickly. Also it was felt that the flames and circulating blowers of the two small furnaces would be pleasingly quiet.

The upper diagram shows the arrangement. Return air from duct A goes to blowers B and C. D and E are the outlets of the furnaces and connect to F, the supply duct of the distribution system. G and H are high limit controls. J and K are two smokepipes, connected to one large smokepipe.

At first, each burner was started and stopped by its own room thermostat. The two thermostats were side-by-side in the living room. One was set about one degree lower than the other. Only one burner would start on a mildly cold day, and only one circulating blower would run. This would give gentle air circulation and mild, steady heat for mildly cold weather, it was felt. During colder weather one burner could not prevent the house temperature from dropping and the second burner would start. Also, the second circulating blower would be put to work automatically.

Poor performance was noticed the first month the system was used. Running one blower produced insufficient static pressure in supply duct F and gave no heat to the rooms far from the furnace. With blower B running and blower C idle, much of the air from blower B escaped downwards through the jacket of the idle furnace unit.

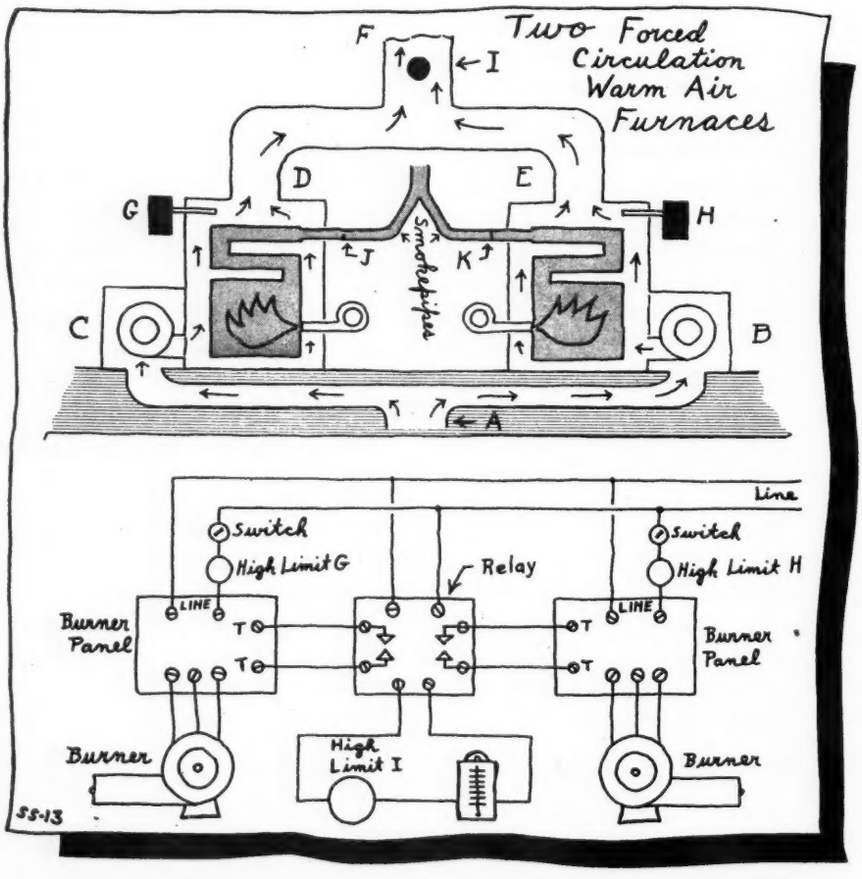
While the heating engineer worked on details of swinging check dampers to prevent backwards flow of air through an idle furnace, the burners started giving ignition failure trouble. A service man found that this was caused by soot deposits which covered the parts in the burner gun tubes in a way new to him. Soot on the porcelain insulators of the electrodes short-circuited the spark.

A thorough check-up showed that starting and stopping only one of the burners gave slight pulsation in the smokepipe and flue passages of the idle furnace. This loosened the light deposits of lamp black in the flues of the idle furnace. A backwards flow of air through the gun tube of the idle burner, caused by starting of the other burner, carried the loosened soot into the gun tube and covered the porcelain insulators with the soot which caused the ignition failures.

Switching to the wiring shown in the lower part of the diagram ended the trouble by making the two burners start and stop simultaneously. The relay in the center of this diagram connects to a 110-volt line, has a low-voltage pilot circuit, and has two sets of load-carrying contacts which close when the pilot circuit is closed but which are open otherwise. Wired to the thermostat circuits of the two burner panels, this relay starts the two burners when it snaps in, stops them both when it snaps out. One room thermostat, in place of the two used earlier, starts and stops both burners. High limit control I, set at 160° and wired in series with the thermostat, also starts and stops the burners simultaneously. Set for wide differential, when it stops the burners this gives an "off" period long enough for both the stack control panels to cool to their burner-starting positions before it re-starts the burners. High limit controls G and H, in the furnace bonnets and set at 225°, are for safety only and probably never will have to stop the burners.

Besides eliminating the depositing of soot in the burner gun tubes, the new wiring ended the air circulation difficulties experienced earlier as a result of firing only one furnace on mildly cold days. Now, soon after the two burners start simultaneously, both the circulating blowers are running.

**fueloil & oil heat Short Short Article on Burner Service**




**Top portion** *of diagram portrays the installation, showing one return duct for both furnaces and both furnace outlets connecting to a single supply duct. Lower portion of the diagram shows the wiring layout finally used.*

# Oil saving and more comfort for *users* of oil heat

**Comfort Is Profitable**

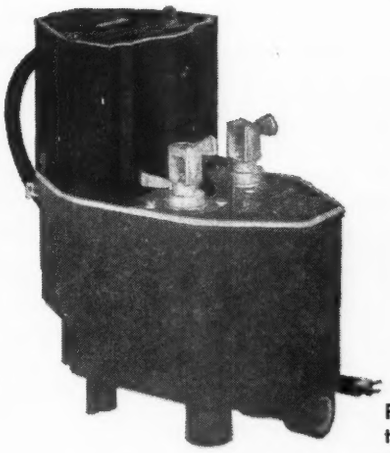
**more profit for you by making the heater automatic...**

**Many Thousands of Oil Heater Users Need This Equipment**

- "DETROIT" ADD-ON CONTROL
- ROOM THERMOSTAT
- FUEL TRANSFER PUMP
- THREE-WAY VALVE

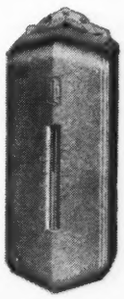
## TAKE ADVANTAGE OF THIS HUGE MARKET

Here are four items you can sell, singly or in combination, to those who now have manually controlled oil heat. By providing thermostat regulation, comfort is increased and *oil saved;* and oil saving has become very important. The fuel transfer pump makes fuel supply automatic. The three-way valve permits installation of a reserve tank.



**"Detroit" CRC-239-P and CRC-239-PF Add-On Controls**

Fasten to the top of manual type CRC-239 Float Valves. Make either single or dual valves automatic under control of No. 411 Thermostat. Easily applied, reliable in operation—and profitable to sell.

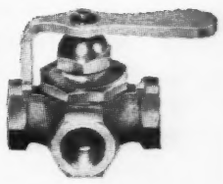


**"Detroit" No. 411 Room Thermostat**

Provides accurately leveled temperature control, eliminates costly overheating. Saves oil. Easily installed—easily adjustable. With the Add-On Control, it provides automatic oil heat with a manual type CRC-239. The combination has a strong appeal to owners of space heaters and floor furnaces.

**"Detroit" CRC-433 Fuel Transfer Pump**

Makes fuel supply automatic — no more hand carrying of oil to the heater. No spilling, no mess. Automatically supplies oil from main tank. No attention needed after installation.



**"Detroit" CRC-520 Three-Way Valve**

Permits installation of second oil tank for reserve, or for less frequent delivery. Valve has three positions—right hand tank—left hand tank—and all off. Cast brass body —⅜" or ½" F.P.T. connections.

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***Write for details on these profitable items.***

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AND REFRIGERATION ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS

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"DETROIT"

# Panel Heating Problems Aired by Warm Air Men

TECHNICAL PROBLEMS concerned with the improvement of the performance of direct fired warm air heating systems were featured at the Mid-Year Convention of the National Warm Air Heating and Air Conditioning Association at Chicago, June 29 and 30. Panel heating with warm air got the major share of attention with two reports on different phases of the problem from research activities at the University of Illinois.

W. A. Matheson, chairman of OHI's Publicity and Legislative Committee, gave the session a report on the present fueloil situation. He predicted there would be ample oil for all central heating oilfired installations next winter at the present rate of burner sales, and said that the anticipated figure of 350,000 to 400,000 new installations would require hard selling to achieve this year. Mr. Matheson outlined the work accomplished with the Oil Industry Information Committee, and praised the cooperative attitude oilheating men had experienced in working with the oil industry men. M. W. Niewenhous, chief, Building Materials Negotiations Division of the Department of Commerce outlined the procedure his division is following to get steel for 212,000 warm air furnaces for the rest of this year.

### Little Advantage for Panels

R. W. Roose, special research assistant, University of Illinois, reported on tests made at the Association's new research residence with air-heated ceiling panels. Tests with a conventional forced air heating system were compared with results obtained with warm ceiling panels.

Comparative results of the tests showed little difference in the performance of the two systems from the point of view of comfort, but the fuel consumption with the radiant installation ran nearly 20% higher than with the conventional system. This was attributed to losses into the attic space over the radiant panels.

The tests showed the temperature difference from the 30-inch breathing level to the floor was 2.2° with the conventional system, but was cut to 0.7° in the panel heating installation.

Mean surface temperatures of all surfaces except the warm ceiling were recorded at 71.5° with the panel system, and 71.2° with the conventional system.

H. D. Bareither, an instructor at Illinois, reported on tests made on floor slab construction. The floor slabs were unheated, and no data on heat loss from radiant floor heating was available. Tests showed the need for adequate insulation at the edges of the slabs and inward for a distance of about three feet. Beyond this three foot zone at the edge, heat losses were equalized. A number of types of slab construction were tested. Though complete insulation under the entire slab did not seem justified when cost is considered, Mr. Bareither warned that different results might be obtained with heated slabs. The most important thing proved was that 2 inches of insulation around the edges of the slab, separating it from the foundation or footing, is very important in cold slab construction.

### Gravity Design Successful

Morris E. Childs, special research assistant at the University, reported on tests with an extended plenum system for gravity warm air heating. Tests were made in the Small Homes Council Research Residence, and the system was found to be entirely satisfactory.

With this system the gravity warm air pipes do not slope down toward the furnace. The furnace bonnet or plenum is extended up to three inches from the floor of the living quarters. A shield eliminates any fire hazard. This plenum is extended between the floor joists, and supply pipes are taken off the plenum to floor and wall registers in the living space.

The temperature gradient from the breathing level (30 inches) to the floor was found to be only 3° with this system when the outside temperature was 35°, and increased in a straight line to 6.5° at zero outside.

A luncheon meeting was addressed by Fred Smith, executive vice president of the Foremen's League, who advised a better understanding between employers and employees through mutual respect and sympathy with the points of view of each. He asked management to view employees as individuals and not as a class, pointing out that Americans are individualists regardless of their jobs.

John W. Boatwright, Standard Oil Company (Ind.), addressed a meeting of the National Heating Wholesalers Association on the day before the opening session of the Warm Air meeting. He estimated that the petroleum demand for the first six months of 1948 would be 8.7% greater than for the same period in 1947, with the distillate demand up 18%. Against this he estimated supply 9.9% greater than for last year, and concluded his paper:

"The oil industry will provide almost 10% more petroleum in the first half of 1948 than it did in the same period of last year. Thus far, demand has grown by a lesser amount so that some restoration of abnormally low inventories has been achieved. Further inventory growth is needed to eliminate local supply problems at the peak of the winter season. Supplies probably will remain tight for some months to come.

"Greater reliance must be placed on coal to carry its full share of the nation's energy load in the future. Coal today constitutes the cushion which must absorb any abnormal impetus upon energy requirements."

◈

*Ronald F. Marsden* has assumed the duties of director of purchases, L. J. Mueller Furnace Co., Milwaukee, Wis. *E. R. Stemper*, director of purchases for many years, will remain as a consultant.

*Harry Bernard* as chief engineer, Mack Trucks, Inc., New York, N. Y., succeeds W. M. Walworth, resigned, and is responsible for the engineering of the company's entire line of trucks. For the present he will make his headquarters in Mack executive offices. He had been director of service and service engineering for the three past years. He joined Mack in 1924.

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**A REAL ENGINEERING ACHIEVEMENT**

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# Modernization of equipment means Sales!

Are you aware that a 1938 Webster Electric Fuel Unit can easily be made to function like the improved 1948 models?

It's possible because Webster Electric engineers planned it that way. Many improvements have been made in the past ten years, yet every change was so calculated that *fuel units already in service can have the same up-to-the-minute performance characteristics.*

The strainer assembly . . . all elements in the seal . . . the valve mechanism . . . the pump . . . all have been constantly improved for top performance, as the result of Webster Electric continuing research. Yet they will fit like the original parts in old units—a feature of interchangeability seldom found in precision products.

You, and your customers, receive the full benefit of this unique engineering policy. It fits perfectly into any summer check-up or modernization program that you may be working on.

To make it still easier for you, expert and thorough rebuilding service is readily available through the nationwide *Webster Electric Authorized Service Station Organization.* Write for name of Station in your vicinity.

**Thermodrive . . .**

. . . provides greater comfort in the home and conserves heat and fuel by regulating the flow of warm air. It can be installed at any time during the year. Send for complete information and enjoy extra sales.

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**"Where Quality is a Responsibility and Fair Dealing an Obligation"**

Webster Electric Fuel Units are manufactured in Canada by Canadian Acme Screw & Gear, Ltd., Toronto

## Baltimore OHI Sponsors Aggressive Burner School

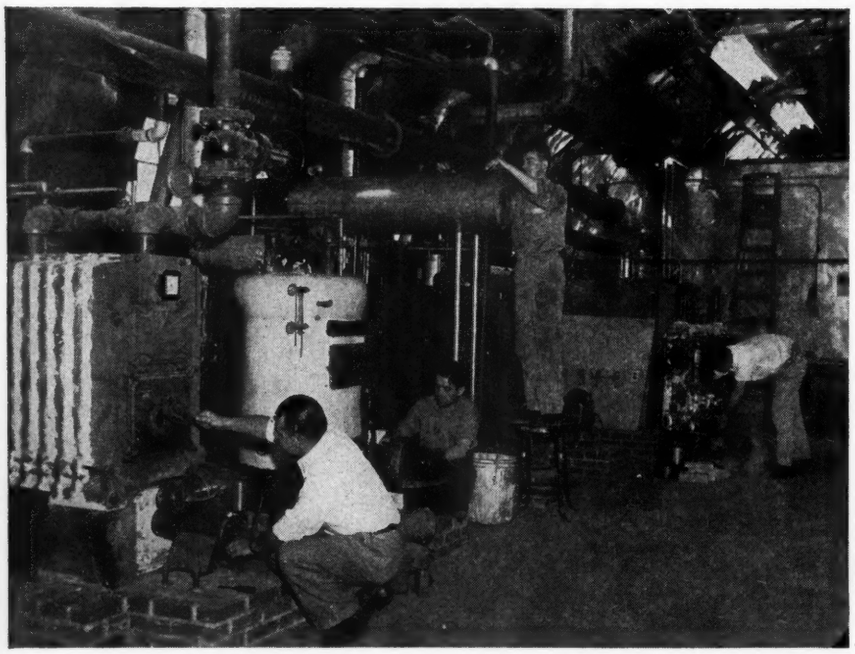
AN OILBURNER SCHOOL, sponsored by the Baltimore Chapter, Oil-Heat Institute, and established with its guidance and assistance, is owned, staffed and operated by the city's Department of Education. The Oil Burner Service School occupies half of a large quonset hut at Lock Haven Road and Fillmore Sts., and shares the building with a diesel engine school. Occupying an adjoining quonset is an automotive school.

M. P. Miller is principal of the establishment, with Instructor Dixon Goldman in direct charge of the oilburner portion. Mr. Goldman recently supervised extensive installations of heating equipment for the Army and prior to that was a field engineer for several large oilburner manufacturers.

Operated on the principle of "learning while doing," the oilburner school occupies 2400 sq. ft. of floor space and provides for the use of the students plenty of tools, pipe and fittings, tubing and other components of oilburner installation and maintenance. Twelve boilers and furnaces already are installed in the school, each fitted with an oilburner, and three more will be ready shortly. Burners of all sizes and types are provided for instruction and practice, from small sleeve type vaporizers to giant horizontal rotaries. Also nearing completion is a quick change pump and fuel unit test rack, while control demonstration boards arranged to simulate operating conditions, dummy boiler bases for teaching fundamentals of firebox construction, and quantities of pumps, motors, valves, strainers, nozzles and controls are in daily use.

The school at present has fifty-five students in day and night classes, an increase of almost exactly 100% over the twenty-eight enrolled when the school opened on March 1. Enrollees in night school classes are required to be employed actively in the heating trade during regular working hours. The complete course lasts 140 hours.

Much of the school's equipment has been purchased from or donated by Baltimore companies. Generous donations have given the school an excellent assortment of practical equipment, says Mr. Goldman, but the school now is desirous of securing additional teaching aids, such as instruction manuals and wall charts prepared by individual manufacturers. Some of this material has been obtained from local dealers and manufacturers, and the school is soliciting additional contributions from other manufacturers interested in enlarging the scope of the school's activities.



**General view** *of students working on equipment installed The Oil Burner Service School, Baltimore, sponsored by the Baltimore O.H.I., and operated by the city's Department of Education.*

## Public Relations Group Adopts Optimistic Note

THE PUBLIC RELATIONS Committee of the Board of Directors of the American Petroleum Institute has approved the copy platform on supply that had been adopted by the Oil Industry Information Committee at its May 14 meeting in Dallas. The significant statement in the platform was "It is expected that the Nation's overall supply of oil products will meet the overall needs of present consumers, as well as provide for a reasonable increase in oil consuming equipment."

While this statement on the surface seems relatively bland, it is actually very significant. The Oil Industry Information Committee is made up of the public relations chiefs—men of top policy level—from most of the major oil companies. These men control the attitude of their companies, both in public statements and in advertisements. Through the winter and spring months there had been numerous instances where they released very gloomy material which proved detrimental to oilheating. Now they are saying, in effect, that their companies future attitudes will omit the gloom.

Lon Casler, Public Relations Counsel for OHI, and W. A. Matheson, Chairman of its Publicity and Legislative Committee, attended the Dallas meeting where this policy decision was made and took part in the discussions.

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## Oil Men Predict Rise In Crude Oil Prices

RISING PRICES of materials used by the oil industry, and the continuing pressure of increasing demand are likely to force an increase in the posted prices of crude oil, according to a number of petroleum economists. Indications of an increase have been building up for some time, and some companies already are paying above the posted prices.

Reports from Texas indicate posted levels for crude oil, in that area at least, are no longer a true barometer of prices. The intense competition among refiners—both large and small—has resulted in premium payments by even a few major companies, according to oil circles. Where cash payments are not made to hold crude oil connections, it is under-

TORIDHEET

# 25

1923 1948

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OF RESEARCH
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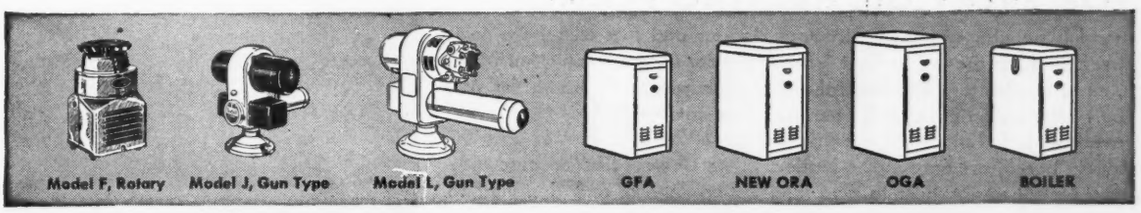
EXPERIENCE

AUTOMATIC HEATING

**In production** for automatic heating are all the oil burners, the air conditioning units (gas or oil) and the boiler unit sketched below.

Fine engineering and high efficiency are the basic qualities of this line of Toridheet Automatic Heating Units.




## TORIDHEET DIVISION

CLEVELAND STEEL PRODUCTS CORPORATION, CLEVELAND 2, OHIO

*Affiliated Canadian Manufacturers: Conroy Manufacturing Company, Ltd., Catharine St., St. Catharines, Ont.*

stood other inducements are offered. Drill pipe, which is urgently needed by many oil firms, is tossed into the deal to assure a crude oil supply. This competitive bidding behind the scenes has grown more intense of late. Some observers believe it could lead to a posting of generally higher crude prices.

Major oil companies in the past have posted the price they will pay for crude oil in the nation's various fields. Smaller companies in periods of heavy demand have offered premiums above this price.

In the past, increased premium paying usually has meant a higher posting by major companies. Today some major companies are attempting to avert a higher posting and still hold their crude oil sources by offering inducements almost equal to those made by smaller buyers of crude.

◈

*E. G. Youngberg,* recently general manager, Pana Refining Co., Pana, Ill., has joined Allied Oil Co., Inc., Cleveland. He has been active in the oil industry for thirty years and in his new position will supervise procurement.

## Gas Industry Complains Of Low Heating Rates

IT IS INTERESTING to notice that in areas where oilheating men complain of low gas prices, likely as not the gas company is also complaining. In its annual report to stockholders, the Consolidated Natural Gas Company, a New York holding company for gas utilities throughout the country, included this comment "We have a very serious competitive condition in the gas business with other fuels. At the present time, for instance, under regulation, we are in Cleveland selling enough gas for a dollar to do what two dollars worth of oil would do and what about one dollar and forty cents of coal would do. In Pittsburgh the figures are very much in the same relation, and that is true of our whole system. That is one of the principal reasons why we are having tremendous growth in the domestic business."

In nearly every section of the country gas utilities are dissatisfied with their low rates in a time of rising costs, and it is quite apparent that when we get back to a free and open competitive market between gas and oil, gas prices will be substantially above those of today.

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## FHA Starts Total 131,346 For Five Months

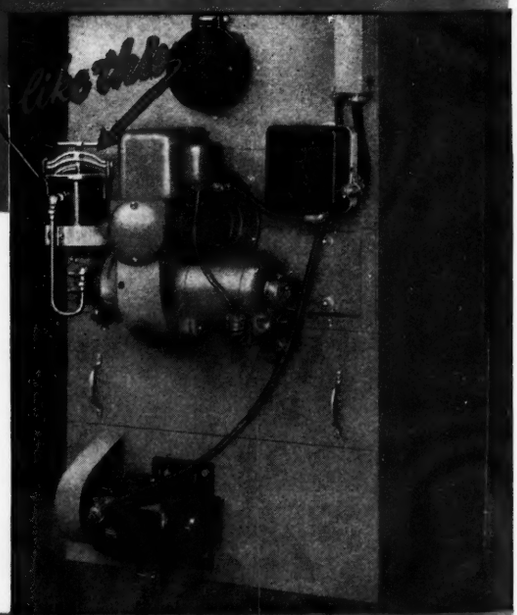
A TOTAL of 131,346 new dwelling units financed and built under the various programs of the Federal Housing Administration was begun during the first five months of this year, FHA Commissioner Franklin D. Richards announced on June 19. Previously, he had revealed that a new all-time record of new dwellings started in any one month under FHA inspection had been established in April with a total of 35,555 units. This exceeded March's volume of 30,122 units by 18% and the previous high record of 30,386 started last October by 17%.

The five month's total this year is nearly two and a quarter times the 58,864 units during the same period last year. This record volume includes only those properties financed under Titles II and VI, for which first compliance in-


The General

CAN INCREASE YOUR SERVICE DOLLAR VOLUME WITH INSTALLATIONS

- Make profits on every installation.
- Eliminate troublesome call backs.
- Build regular repeat business through cartridge replacements.
- Help customers save money by giving cleaner burning fuel.
- Build goodwill and customer loyalty by providing trouble-free operation.



General HAS THE RIGHT FILTER FOR EVERY OIL HEATING PLANT!

The *General* is popular with all contractors, dealers and fuel oil service companies because it has proven the best fuel oil filter for heating plants, hot water heaters, and room heaters. The *General* will prove a profitable leader for you, too! Report after report in our files bear out these statements.

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There is no better time than now in letting *General* Fuel Oil Filters increase your service dollar volume. Contact your jobber immediately or write direct for information and discounts.

Listed: Re-examination Service, Underwriters Laboratories

GENERAL FILTERS INCORPORATED

GENERAL FUEL OIL FILTER

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SEE YOUR JOBBER OR WRITE DIRECT TO THE FACTORY

# These AMERICAN-Standard signs tell everyone

STRIKING identification signs like these point you out as an American-Standard retailer in your community. On your door and on your windows, brilliant American-Standard Mark of Merit decals tell everyone that you sell the finest. And you can put these free decals on your trucks and cars and gain additional worthwhile advertising throughout your territory. You can also secure, at little cost, a handsome, flasher-type electric sign which will draw extra attention to your salesroom. And to advertise your services and products on the job, large "Installed Here" signs boldly imprinted with your name and address are available at a small charge.

These dealer identification aids and many other helpful selling tools are fully described in a new book, "Plan for Better Business." Ask your Wholesale Distributor for your copy now. See for yourself what wonderful support you can count on from American-Standard. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pennsylvania.

**AMERICAN-Standard offers a complete set of Selling Tools to help you**

**YOU CAN'T MISS WITH SUPPORT LIKE THIS!**

AMERICAN-Standard

*First in Heating and Plumbing*

***LOOK FOR THE MARK OF MERIT***—It identifies the world's largest line of Heating and Plumbing Products for every use . . . including Boilers, Warm Air Furnaces, Winter Air Conditioners, for all fuels—Water Heaters—Radiators, Convectors, Enclosures—Gas and Oil Burners—Heating Accessories—Bathtubs, Water Closets, Lavatories, Kitchen Sinks, Laundry Trays, Brass Trim—and specialized products for Hospitals, Hotels, Schools, Ships and Railroads.

spections by local FHA offices are required. Under Title II 14,952 dwellings in 1- to 4-family structures were financed; 75,794 units in 1- to 4-family structures financed under veterans emergency provisions of Section 603, Title VI, and 40,600 units in rental housing projects financed under the emergency provisions of Section 608, Title VI.

## U. S. Department of Labor Fueloil Prices March

FIELD INVESTIGATORS for the Department of Labor monthly check prices of principal fuels in several cities in each section of the country. Getting retail quotations from various supplies in each market, the prices are averaged and published. Those in the table that follow were taken Mar. 15 (cents per gallon):

| | Range | No. 1 | No. 2 | No. 3 |
|---|---|---|---|---|
| Boston | 14.43 | 14.00 | 12.32 | .. |
| Manchester | 15.23 | 14.80 | 13.08 | .. |
| Portland, Me. | 14.06 | 14.08 | 12.28 | .. |
| ***Buffalo | 15.86 | .. | 13.84 | 13.84 |
| **New York | .. | .. | 13.70 | .. |
| Philadelphia | .. | 13.50 | 12.00 | .. |
| **Chicago | 15.73 | 15.32 | 13.36 | 14.32 |
| ***Detroit | .. | 15.58 | 14.91 | 13.08 |
| Milwaukee | .. | 15.90 | 14.48 | 14.65 |
| *Kansas City | .. | 13.30 | 12.72 | 12.89 |
| Minneapolis | 15.07 | 14.83 | 14.12 | 14.13 |
| **Baltimore | .. | 13.36 | 12.17 | .. |
| Wash., D. C. | .. | 13.60 | 12.50 | .. |
| Jacksonville | .. | 14.83 | 13.48 | .. |
| Norfolk | .. | 13.40 | 11.40 | 11.40 |
| Richmond | .. | 13.62 | 11.80 | .. |
| Savannah | .. | 16.62 | 14.67 | .. |
| ***New Orleans | .. | 14.63 | 12.88 | 12.67 |
| Portland, Ore. | .. | 13.10 | 10.80 | 6.90 |
| ***San Francisco | .. | 12.94 | 10.71 | 6.62 |
| ***Seattle | .. | 13.62 | 11.45 | 7.11 |

*Price includes 1% sales tax.
**Price includes 2% sales tax.
***Price includes 3% sales tax.

## Chicago Emergency Group Files Final Oil Report

A FINAL REPORT on the activities of the Chicago Fueloil Emergency Committee was filed by Chairman Frank E. Spencer of the Metropolitan Fueloil Industry Committee, covering operations from February 5 to March 31, 1948. The report, dated June 15, 1948, shows the Emergency Committee handled 5,036 applications, of which 4,988 were accepted and allocated, and 88 were rejected. Total amount of fueloil actually delivered to hardship cases during the period was 247,400 gallons.

Forty-eight companies cooperated in the emergency effort, delivering 50 gallon lots to cold homes. Second applications were accepted two weeks after the first delivery.

Drivers reported that in 140 cases no one was home on at least two attempts to deliver. In 54 cases the regular supplier had made delivery after the application was filed. There were 49 cases where the owner had 75 to 200 gallons on hand after certifying that he was practically out of fuel. In 32 cases the applicant did not have cash ready to pay, 22 refused to pay the posted price and 6 thought the oil was free. Most cases of non-delivery were due to improper storage.

## British Homes and Industries Turn to Coal

THE CONVERSION-TO-OIL program in Britain has been very seriously limited within the past few months by the growing control which the Government is maintaining on petroleum imports. As a result, there has been a definite slackening in the volume of conversions, and in some cases a reversion instead to coal. This trend is likely to be accelerated even further if the present coal situation is maintained and improved, although there is, on the other hand, an increasing tendency to export coal.

The extremely mild winter has been a big factor in assisting British concerns to make out with a minimum of heating during the past winter. But for the very fortunate weather conditions, the situation would have been vastly more difficult. The present expectation is that no further conversions to oil will be encouraged, that both industrial and domestic users will be switched wherever possible to coal, and that the oil equipment industry will be increasingly switched to the manufacture of equipment for overseas buyers.

The authorities argue that it is futile to allow dissipation of productive capacity by the country's own industries if they can be diverted to earn income from abroad. The majority of the oil equipment firms hold very considerable contracts for both marine and land installations in every part of the world, and are in a position to earn revenue when freed from domestic commitments.

## Canadian Oil Supply Seen Easing This Year

IMPROVEMENT IS EXPECTED in the oil supply situation in Canada in 1948, John Irwin, president of Canadian Oil Companies, Ltd., told shareholders at annual meeting. He said that as some 60% of the petroleum consumed in Canada originates in the United States, an appraisal of the Canadian supply position can be made only in relation to U. S. output.

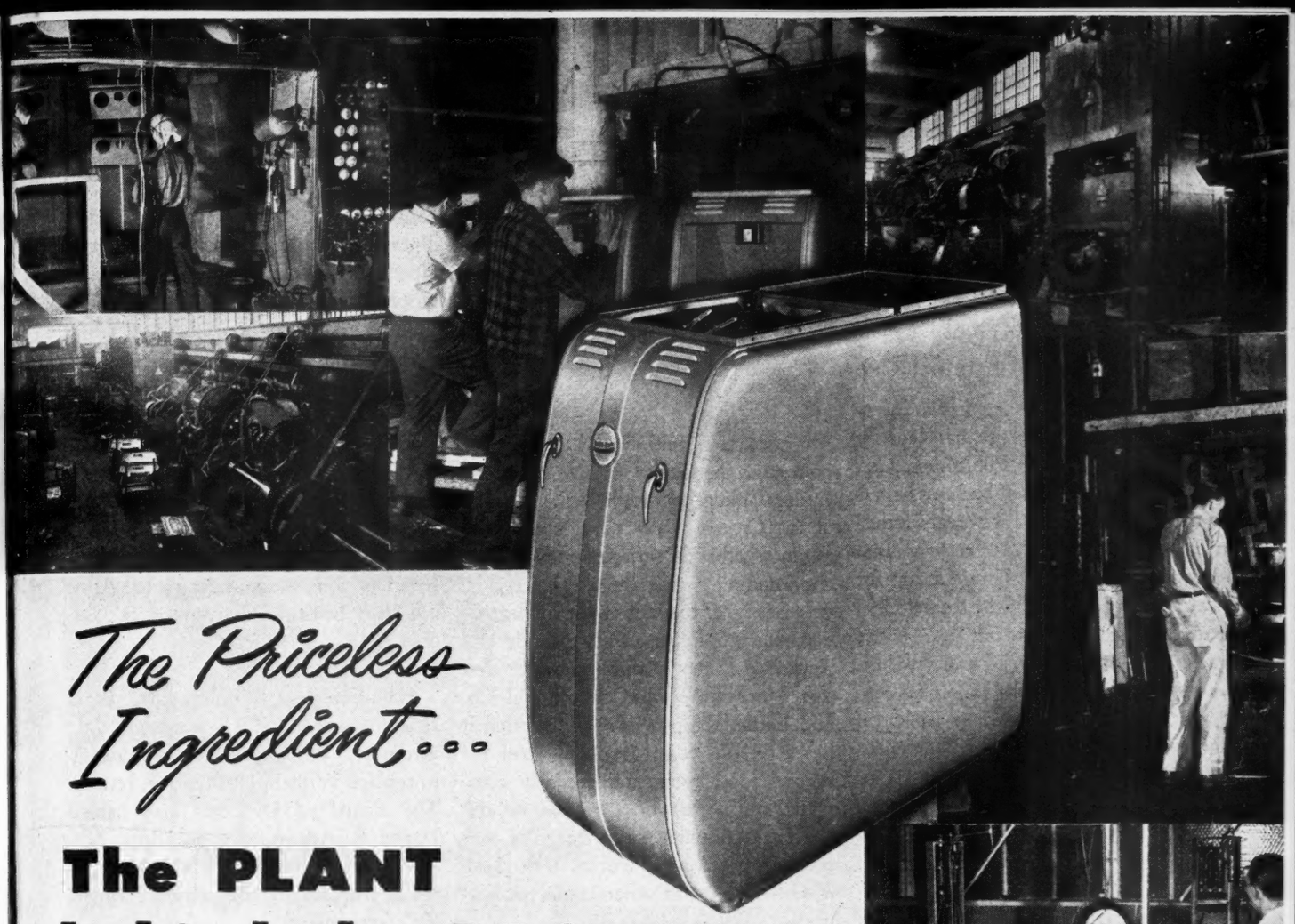
"In this connection," he said, "it is encouraging to note that, at the end of 1947 . . . U. S. oil reserves were at an all-time high. Moreover, production in 1948 is expected to break all records. In U. S. and Canada combined it is estimated that refinery production this year will be 5.8 per cent over 1947, as compared with a projected increase in consumer demand of not more than 5.5 per cent. Also it is expected that the tanker shortage . . . will largely have disappeared by mid-summer."

For a few months yet, "spot" shortages may be encountered, Mr. Irwin stated, but, unless some new world disturbances arose, he was convinced that the petroleum industry would meet the demands made up on it and that, by the end of 1948, the supply situation would have improved considerably.

## Canadian Oil Price Not Government's Concern

RT. HON. C. D. HOWE, Minister of Trade and Commerce, has reiterated in the Canadian House of Commons that the Government has no authority to interfere with the distribution or the prices of fueloil for household heating. He was replying to Park Manross (P. C., London, Ont.) who called attention to the fact that some suppliers of oil had advanced their prices from around 17 cents a gallon to as much as 26 cents and asked for a Government statement of policy.

Mr. Howe said the Government had used its "good offices" recently to see that no one went without fuel but had no control over the supply or distribution of oil. He presumed the price increases resulted from small dealers taking new customers after the Government had asked them not to. When shortages



*The Priceless Ingredient...*

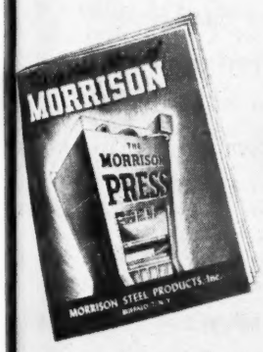
# The PLANT behind the PRODUCT

A product is only as good as the plant and personnel behind it . . . its priceless ingredient.

We want to tell you about this priceless ingredient — so we have prepared for your approval "This is the Story of Morrison" the story of the plant behind Morrison products. Its entire purpose is to give you an idea, at least, of who we are — what we make — and how we might be of service to you.

We feel rightfully proud of our products, our plant, and our personnel. We think that perhaps the reason for our pride will be of interest to you, giving you added confidence in us as a manufacturer and supplier of your warm air furnace requirements.

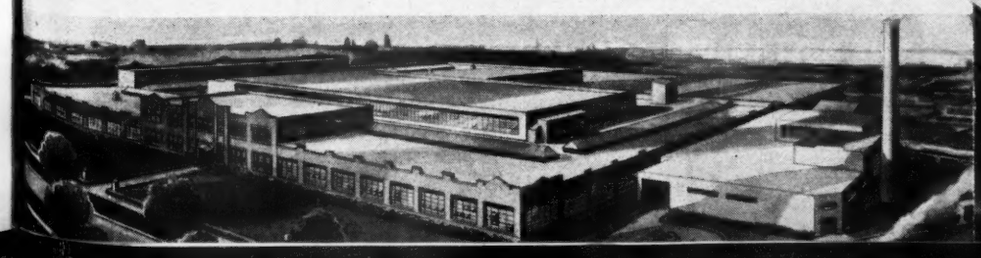
That's why we want you to know the firm behind the furnaces you buy . . .

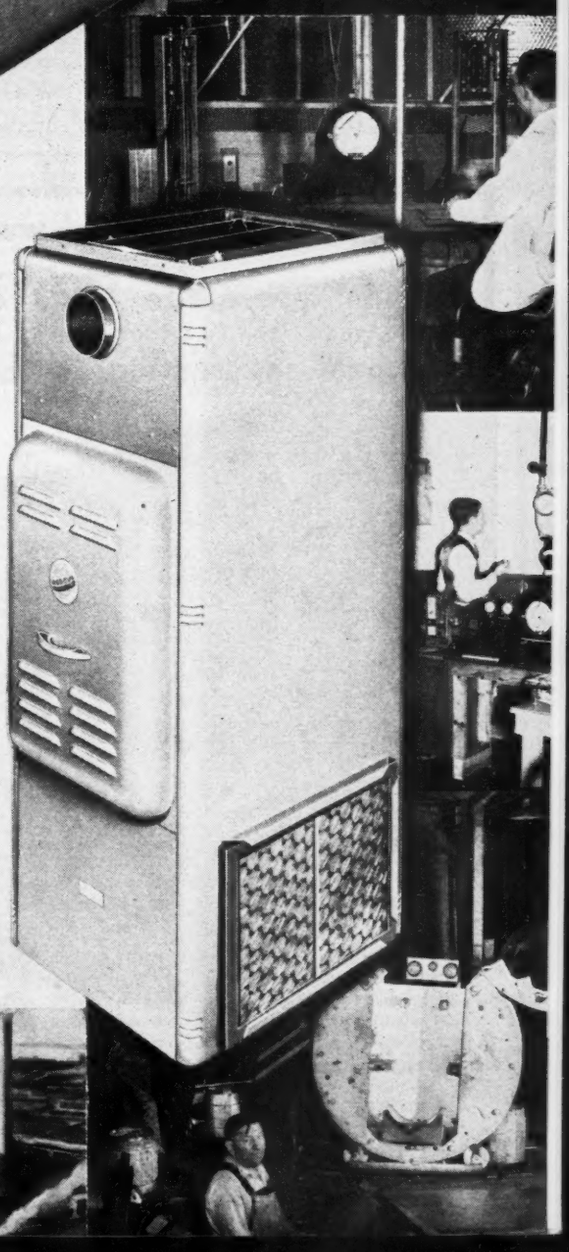



*We cordially invite you to write for your free copy of "This is the Story of Morrison."*

## MORRISON
### STEEL PRODUCTS, INC.
**601 AMHERST ST. • BUFFALO 7, N. Y.**

*"The Sun Never* MOR-SUN PRESSED STEEL FURNACES *Sets with Mor-Sun"*





developed, they had to obtain their supplies from distant sources and presumably passed freight and other charges to their customers, resulting in the price increase.

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## Dairy Industry Survey Shows Fueloil Use

BOILER FUEL USED BY the dairy industry is revealed in a recent mail survey made by the Olsen Publishing Co., Milwaukee, publishers of business papers to the milk, butter and ice cream industries. There were 1,222 returns that showed fuel used to generate steam for heat and processing. Of the total 48.9% burn coal; 37.5% use oil; 13.3% use gas and 0.3% burn wood and sawdust.

However, 15% of the reporting concerns intend to change their fuels. Of those who plan a change 105, or 64%, will change from coal to oil; 21, or 12.8%, will go from coal to gas, and 7.4% plan to change from oil to gas. Only 2.5% plan a change from gas to oil.

Changes from coal to oil in dairy plants will be made chiefly to get cleaner operation. Of the total reasons given for a change to oil, 36.2% will change because oil is cleaner than coal; 15.2% to save labor; 11.6% for greater convenience; 9.8% because it is cheaper; and 5.8% for greater efficiency. Most changes from oil to coal were for reasons of economy.

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*Charles H. Burkhardt* has been appointed to the faculty of Walter Hervey Junior College of the YMCA Schools of the City of New York. He will be an instructor in refrigeration and air conditioning engineering. Formerly, he was head of the automatic oilheating department of the YMCA Trade and Technical School and prior to that was connected with Concord Oil Co. and United Shipyards. Mr. Burkhardt has served as a heating consultant for several local firms and recently completed authorship of a volume on oilheating techniques. He is a regular contributor of technical articles to FUELOIL & OIL HEAT and other trade publications.

*Joseph W. Honomichl*, 54, an assistant general manager of sales, Standard Oil Co. (Indiana), died May 20 in Evanston, Ill., following an extended illness. Surviving are his wife and a son. He joined the company in 1915 as a sales writer at Wichita, Kan.

*Rep. Thomas L. Owens*, serving his first term in the House of Representatives from the 7th Illinois District, died at Bethesda Naval Hospital on June 7. He is survived by a wife and three children and a brother, James W. Owens, executive vice president, Mercoid Corp., Chicago. He was a speaker at the Accessory Division luncheon during the April Oil-Heat Institute Convention at Chicago.

*Hamilton Page*, for the past two years assistant secretary, The Autocar Co., Ardmore, Pa., has been elected secretary to replace William H. Brearley, retired. The Board of Directors also named Daniel P. Adams, vice president, Marine-Midland Trust Co., New York, to the Board vacancy caused by Mr. Brearley's retirement.

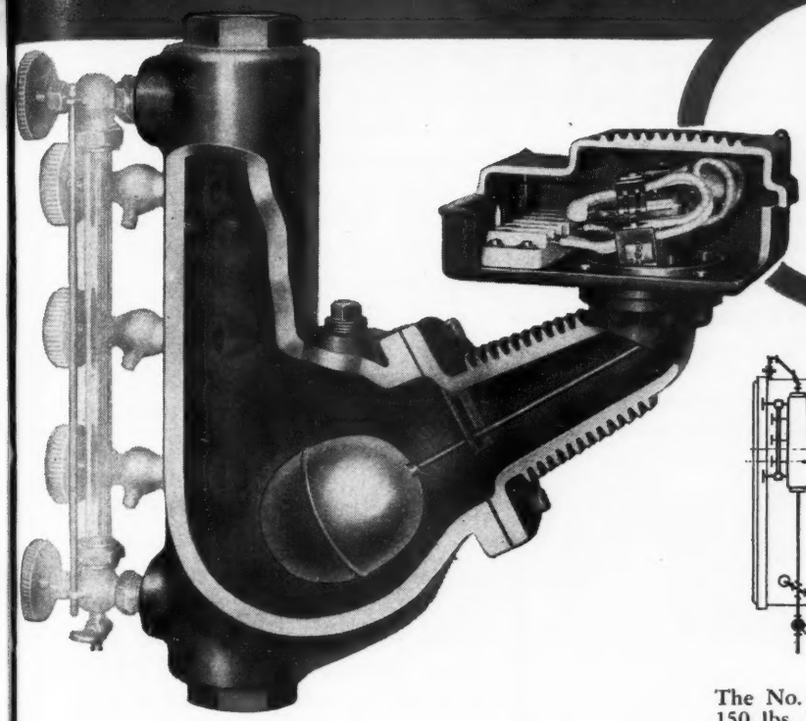

**Healthful, economical warmth in winter plus ample hot water at all times have made *The Bethlehem* DYNATHERM a source of heat satisfaction to thousands of home owners!**

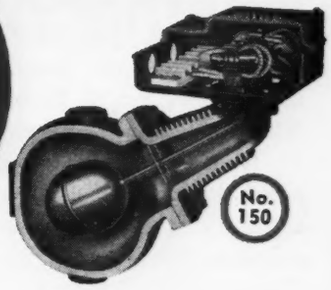
Actual tests prove that the Bethlehem DYNATHERM'S "whirling flame" gives efficiencies better than 80 per cent. Your own eyes will tell you the Bethlehem DYNATHERM is the most compact and attractive modern heating unit on the market. And your customers good judgment will say "Buy" when they compare installed prices and values with this great development of a century-old company!

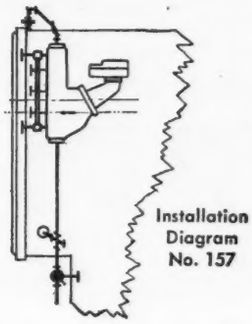
*A few exclusive Bethlehem Dynatherm territory Franchises are still available. Wire or write immediately for full information.*

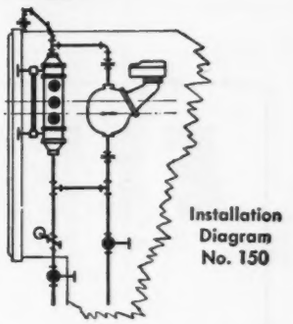
THE BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

# Now comes the NEW McDonnell No. 157






The No. 157 is for boilers of any size; maximum steam pressure 150 lbs. Notice how the operating unit is the same as the widely praised McDonnell No. 150 illustrated at the right above. The installation diagrams of the No. 157 and No. 150 immediately above show, through comparison, how practically all equalizing piping and fittings are eliminated by making the No. 157 an integral part of the water column. A worthwhile convenience is found in placing all tappings for water-glass and try cocks in the end of the body so that the control can be located on either side of the boiler. The operation of the No. 157 is explained below.

## . . . . designed to simplify and cut the cost of water level control for high pressure boilers

We call this a new control, but only the method of application is new. As the illustrations show, the No. 157 is actually the dependable and time-tested McDonnell No. 150 low-water cut-off, pump control and low water alarm in water column form. Thus it gives you this modern way of controlling the boiler feed pump and providing emergency low water cut-off and alarm in a form that greatly simplifies installation on boilers having separate water columns.

You simply remove the present water column as shown in the diagram and replace it with the No. 157 unit. The result is a quick, easy, trim, installation giving ideal reproduction of the boiler water level in the float chamber and providing an effective direct blowdown. Still more important in times like these is the elimination of equalizing pipe and fittings. The method saves pipe, fittings and labor. It also provides a better installation under conditions which would require long equalizing piping if the No. 150 were installed.

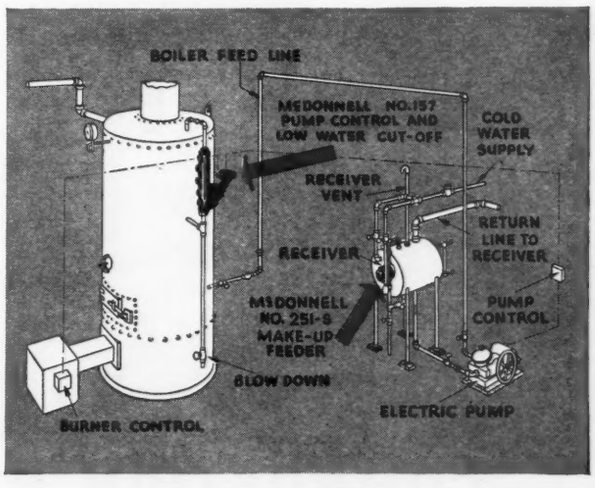
Here is the easy, economical way to apply the most tested, most modern boiler water level control to boilers of any size, steam pressures up to 150 lbs. Note the diagram opposite explaining the operation of the McDonnell No. 157.

*Ask for information and data covering this type of control for any plant conditions.*

**McDONNELL & MILLER, INC., 1310 Wrigley Bldg., Chicago 11, Ill.**

*Doing One Thing Well* — MM SAFETY CONTROLS — *Your Jobber Stocks Them*

# McDONNELL
*Boiler Water Level Controls*




## The modern way to control the boiler feed pump from the boiler water level

Boiler feed pump is controlled by the No. 157 from the boiler water level so that the water line is held within close limits which assures maximum steaming efficiency. A McDonnell No. 251-S on the receiver tank assures a supply of water in the event of insufficient return of condensate. Extra switch on No. 157 provides circuits for low water fuel cut-off and low water alarm in the event of a current interruption in feed pump circuit. With all conditions provided for this method means highest efficiency and complete protection from low water. Ask for simple wiring diagrams.

# Readers' Forum

KALMAN STEINER
*Baltimore 15, Md.*

*Editor:*

On May 10, 1948, the National Bureau of Standards issued a Recommended Revision of Fuel Oils (Fifth Edition), Commercial Standard CS12-40. Numerous radical changes are proposed. Perhaps the oilburner industry at large does not apprehend their significance. Among the more important changes are these:

1. A higher end point for No. 1 oil (625° F. instead of 560). This grade is to be established as the standard fuel for pot-type and other vaporizing burners.

2. A higher pour point for No. 2 grade (20° F. instead of 10°).

3. Viscosity and gravity specifications are introduced for No. 1 grade, where previous editions have not mentioned these.

4. No. 3 grade is abolished.

5. A No. 4 grade is created, after an absence of this number for many years. The specifications make it too heavy for a domestic fuel and too light for most commercial applications.

6. No. 5 grade is stipulated to be a fuel for burners with preheaters.

In view of the far-reaching consequences of these changes, I would like to point out some of the implications, all of which are not bad.

1. The listing of practically all Underwriters' Laboratories approvals will be seriously affected.

2. Establishment of a No. 4 grade and elimination of No. 3 grade may easily lead to the attempted use of No. 4 in tens of thousands of installations now using No. 3.

3. Many thousands of installations of commercial burners now using No. 5 grade unheated may be forced to install preheating equipment to burn the new No. 5 grade. In addition to the preheaters themselves, there is the question of buried lines that would have to be ripped up, to be made larger, or to be insulated, or both.

4. In the trade it was usually considered that a range oil gave better results in a vaporizing burner than a straight No. 1 grade, the chief difference being in a lower end point for the range oil. It is now proposed to raise the end point of No. 1 and declare it to be the standard vaporizing burner fuel. This forebodes aggravation of the "carbon formation" problem.

5. On the credit side, it can be said that there was not much need for carrying both a No. 2 and a No. 3; in fact, the two grades largely served the same need.

KALMAN STEINER.
SKELLY OIL COMPANY
*Kansas City 10, Mo.*

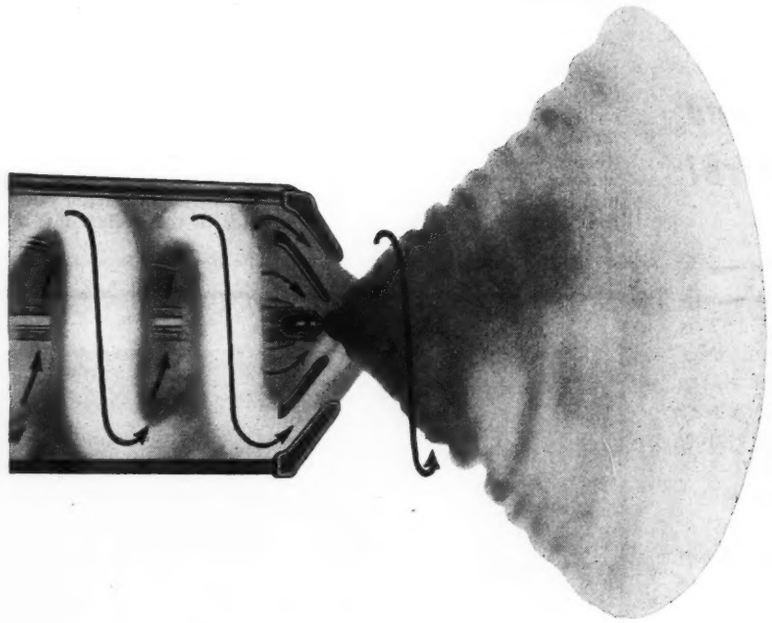
*Editor:*

Your survey of public opinion in regard to the fueloil burning season was very interesting.

I have no criticism to offer on this survey except that you included gasoline, and, as far as customers in the Midwestern area are concerned, there has been no evidence of shortage in the supply of gasoline to date. I think all of the motorists have been able to do all the driving they desired, and the farmers of this area have had sufficient light oils to carry on their work, as well as the commercial accounts. Therefore, I feel

ELECTROL

PRESENTS



The

FREE-FLO

COMBUSTION HEAD

A whirling sleeve of air—two concentric cones! As simple as that! Burns 100% cat-crack oil—14% $CO_2$. No sooting of electrodes—no fouling of nozzle.

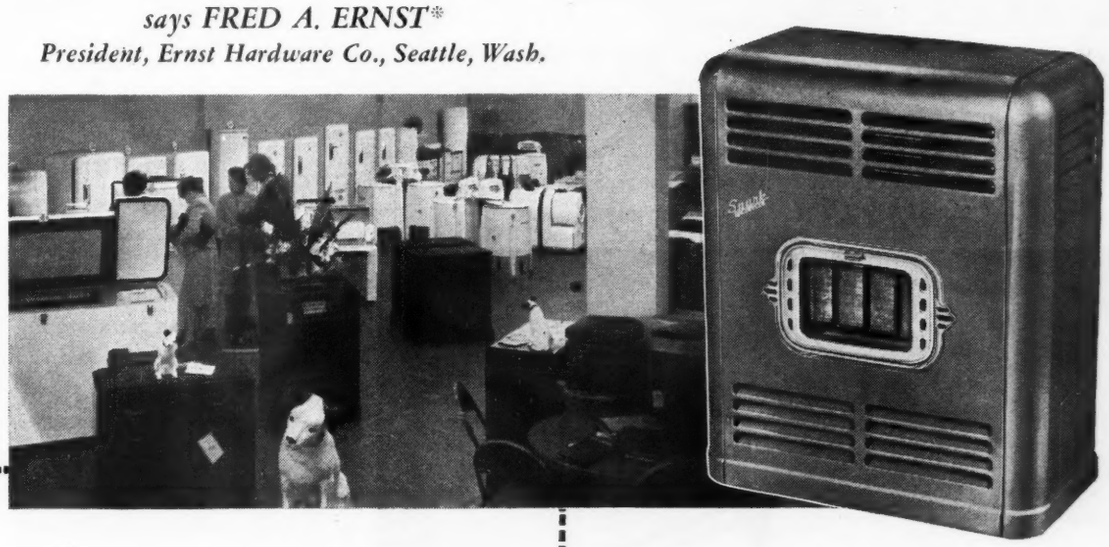
*Write for details.*

ELECTROL BURNER MANUFACTURING CO., INC.

22 UNION AVENUE RUTHERFORD, NEW JERSEY

# "SPARK IS FAR SUPERIOR to any other oil heater we have handled"

*says FRED A. ERNST**
*President, Ernst Hardware Co., Seattle, Wash.*



**Here's what Mr. Ernst says:*

*"We have handled thousands of Spark oil burning heaters since we took on the Spark franchise over ten years ago. We feel that it is the best oil heater made, and far superior to any other oil heater we have handled. It is completely trouble-free. It's like sitting in front of an open fireplace when you have a Spark oil burning heater in your home. It is very economical to operate . . . no changing of wicks . . . no odor. The fuel oil can be stored outside the house. Altogether, Spark is as clean as a whistle."*

*Fred A. Ernst*
*President, Ernst Hardware Co.*
*Seattle, Washington*

**YES,** Spark dealers everywhere agree that Spark oil burning heaters *are* superior . . . that their superior features result in sales and profits. For customers like the pleasing appearance of the Spark heater, and the efficient, low-cost operation (Spark oil burning heaters are approved by Underwriters' Laboratories to burn *No. 1, No. 2 and No. 3 fuel oil).*

## FRANCHISES AVAILABLE

In the growing business of the Spark Stove Co., Inc., there is still room for a few more progressive dealers. Here's a field where honest sales effort will pay big dividends. If *you'd* like to join other dealers in the profits from Spark oil burning heater sales, write to the Spark Stove Co., Inc., 2619 East 12th Street, Oakland 1, California, saying "I'm interested." A coupon is attached for your convenience.

**SPARK OIL BURNING HEATERS**

*A product of*
SPARK STOVE CO., INC.
OAKLAND 1, CALIF.

Yes, I'm interested. Without obligation to me, please tell me how I may obtain a franchise for Spark oil burning heaters.

*Name*_____

*Firm Name*_____

*Street and Number*_____

*City and State*_____

(Clip and mail to Spark Stove Co., Inc., 2619 East 12th Street, Oakland 1, Calif.)

this report would have been more in keeping with present day conditions had it been designed to cover burning oils only.

JESS KNOWLES.

ESSO STANDARD OIL COMPANY
*New York 19, N. Y.*

*Editor:*

I found your survey of public opinion very interesting and passed it on to some of our sales executives who were also glad to have an opportunity to see the results of such a questionnaire. I appreciate your making this available to us, and would be interested in seeing anything further you might develop along these liens.

R. M. GRAY.

ESSO LABORATORIES
*Linden, N. J.*

*Editor:*

To me one of the outstanding findings is the public's view that in time of shortage no other type of oil use should be allowed to stand in the way of satisfying the demand for fueloil for homes and apartments.

There is no question that the industry's planned publicity campaign on the tight supply situation plus the spot heating oil shortages last winter have discouraged the public temporarily on oil-heating. I only hope that Jersey's statements in regard to our having no intention of arbitrarily controlling the end use of our products are being well received.

S. H. HULSE.

AUTOMATIC HEAT INC.
*Philadelphia 41, Pa.*

*Editor:*

I very greatly appreciate receiving a copy of the Benson and Benson Survey. The information is interesting and valuable, provided it is used. The conclusions are excellent.

However, for a long time most oil-burner sales have been made to the lower income groups and I wonder if a sufficient proportion of these groups were interviewed.

I am particularly led to doubt if they were, when I see that only 23% of those using coal have thought of switching to oil in the past year. It is contrary to all our past information. I am inclined to think that the question was asked with too much emphasis on the time. For 77% of coal users to say they have not thought of switching to oil in the past year (April 1947 to April 1948) is ridiculous. If we could have got manpower and tanks we could have sold half the people of Philadelphia in the Summer of 1947.

As I went through the detail of the findings I made some notes which I give you for what they are worth:

Q. 1-a. I believe that except for certain limited areas more than 42% of central plant owners actually use coal. The percentages should have been expressed as of the total less 30% to be valuable. 70% of 756 equals 529; 42% of 756 equals 318; 318 equals 60% of 529.

Q. 1-c. The fact that 83% of oil-burner owners do not want to change is important sales ammunition.

Of those interested in oil: 7% will be leads; 16% must be found and sold (2/3 of them that oil will be available and 1/3 that oil is not too expensive and will not be).

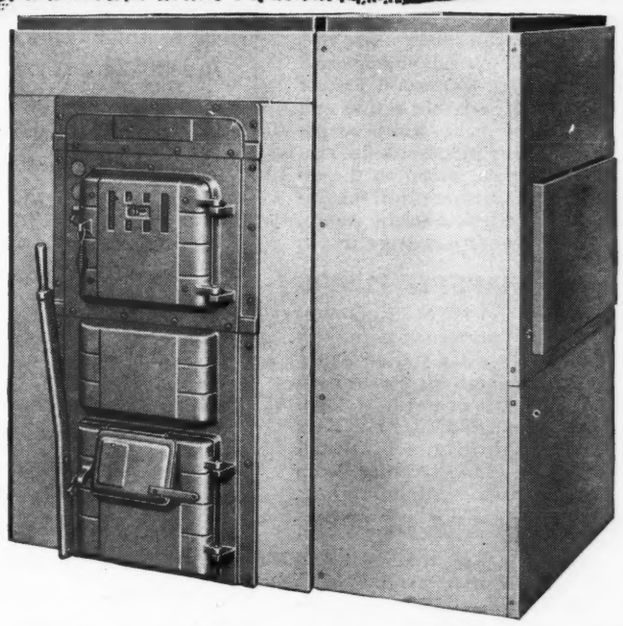
It is interesting to note under Inconvenience due to Shortage that while only

Tested And Approved by Large Industrial Users Over A Period Of Years Involving Millions of Gallons of Fuel Oil Experience!
Greater Savings in Fuel Oil
Higher Profits for Dealers
Faster Repeat Business
Wilcolene
FUEL OIL TREATMENT
INDUSTRY'S PREFERENCE IS OUR BEST REFERENCE
NON-TOXIC
NON-INFLAMMABLE
NON-CORROSIVE
WILCOLENE . . . is available to industry in 5, 30, 55 gallon drums.
WILCOLENE . . . sells because it saves. You profit because Wilcolene "works" and you profit again and again from repeat sales.
INDUSTRY'S PREFERENCE IS OUR BEST REFERENCE!
● ELIMINATES OBJECTIONABLE OIL ODORS
● DISSOLVES SLUDGE, GUM AND TAR
● ELIMINATES CARBON DEPOSITS AND SOOT
● REMOVES MOISTURE
● STOPS INSIDE RUST AND CORROSION
● INSURES FREE AND CLEAR BURNERS
● INCREASES COMBUSTION EFFICIENCY
● LOWERS MAINTENANCE COSTS
● ELIMINATES TANK CLEANING DELAYS
An Added Feature—WILCOLENE . . . conserves Kerosene & Wicks by burning off carbon, giving wicks longer life.
AVAILABLE FOR CONSUMERS EXCLUSIVELY THRU FUEL OIL DEALERS!
And Oil Burner Equipment Distributors
COSMIC CHEMICAL & REFINING COMPANY, INC.
17 West 60th Street, New York 23, N. Y

# You Win 3 to 1 WITH Luxaire's 3 in 1

## ALL FUELS AIR CONDITIONING UNIT

**Whether it's a ..... COAL JOB ..... OIL JOB ..... GAS JOB**



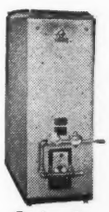
**Because...Luxaire's 3 in 1 Unit is Engineered for**

**1. COAL**
Hand Fired
Stoker Fired

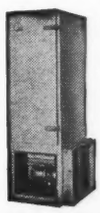
**2.** EASILY CONVERTED and well adapted for **OIL**

***and***

**3. GAS**



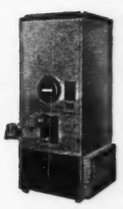
**Series G**
Gas-Fired, Steel Gravity Furnace



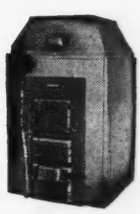
**Series H**
Gas-Fired, Utility Steel Air Conditioning Unit

**Series CA**
Gas-Fired, Cast Iron Air Conditioning Unit

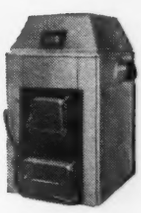
**Series O**
Oil-Fired, Steel Air Conditioning Unit



**Series VH**
Oil-Fired, Steel Utility Air Conditioning Unit



**Series 700**
Coal-Fired, Steel Gravity Furnace



**Series C**
Coal-Fired, Cast Gravity Furnace

**THE C·A·OLSEN MANUFACTURING COMPANY**

Luxaire HEATING & AIR CONDITIONING UNITS

ELYRIA 12, OHIO

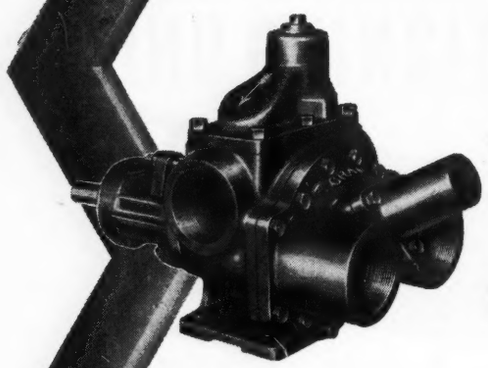
fueloil & oil heat

# PUMP MORE GALLONS AT LESS COST WITH GRANCO!

You're money ahead every minute a GRANCO Pump is on the job! With a GRANCO you get

**LOWER INITIAL COST**
**LOWER INSTALLATION COST**
**LOWER MAINTENANCE COST**
**LOWER OPERATING COST**
**LONGER TROUBLE FREE LIFE**

**=LOWER COST PER GALLON**



GRANCO Pumps handle all petroleum liquids efficiently, from gasolines to asphalts. Whatever your requirements, there is a quiet, compact GRANCO Pump that will do the job better.

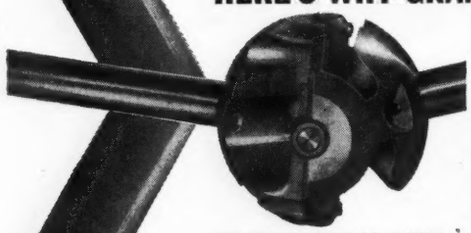
## TRUCK PUMPS

Model DEE Truck Pump (illustrated), specifically designed for tank truck mounts, gives you smallest size and lightest weight per gallon delivered. Compact, quiet, leakproof. Easiest to install. Reversible action and four ports make pump adaptable to any pipe hook-up. You fit the pump to the installation—not the installation to the pump. Never needs priming.

## BULK TRANSFER PUMPS

GRANCO PUMPS give unexcelled performance in Bulk Plant or Transfer Station work. High vacuum, high lift. Never need priming at start or finish of loading operations. No "bleeder" lines necessary. Shown at left, Model DEES—90 GPM GRANCO Pump with gear drive in oil-tight housing.

## HERE'S WHY GRANCO PUMPS ARE BETTER!

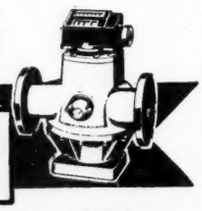


The exclusive, patented ball and squeeze action of the GRANCO spherical rotor—only moving part—provides direct positive expulsion from pump chamber into line of flow. Quiet, friction-free, no contact between rotor and housing—for better performance, longer wear. No gears, blades, scoops, valves or dragging and sliding parts.

**THERE'S A GRANCO PUMP TO DO YOUR JOB BETTER**

See your distributor, or write for full particulars. Sales and Service "at your service" throughout the nation.

Granco



**GRANBERG CORPORATION**
**Oakland 8, California**

Also makers of Granco Rotary Positive Displacement Meters


1/3 of those using oil were inconvenienced, twice as many people were alarmed by the shortage. The survey does not seem to show if those alarmed included those who were inconvenienced. I think it should.

It is strange that in spite of all the publicity and the large number of people alarmed that less than 10% accepted the frequently publicized statement that excessive burner installations caused the shortage.

No better indication of a feeling of fair distribution is needed than to see that only slightly over 6% indicate homes as recipients of favors.

In the matter of groups to have needs filled first, do you ask a donkey if it wants a carrot?

While I don't quite know why it comes in a shortage survey, I am interested that on the question of sex most people prefer it in homes and apartments. I suppose this is natural, but I must admit I can't understand five times as many people preferring railroad engines to automobiles.

It does look as though the many people, who in the past have said they would rather lose their cars than their oilburners, really meant it.

LIONEL L. JACFBS.

GWALTNEY OIL CORPORATION
*Durham, N. C.*

*Editor:*

Thanks very much for the survey of public opinion on fueloil. It it most interesting; however, I do not think that too much damage has been done. The American public forgets very easily. It is true that there has not been enough petroleum for all uses, but we believe this will work itself out in a couple of years. In the meantime my personal belief is that the burner manufacturer will be doing himself a favor if he does not push the manufacturing and sale of oilburner equipment too strenuously except for replacement during this period of readjustment. We oil jobbers are very much interested in the sale of fueloil to home owners as we are not in a position to secure the business of large commercial accounts, so are, therefore, eager to see that home heating comes first.

J. PARKS GWALTNEY,
*Chairman, National Oil Jobbers Council.*

# WITH ALL The FEATURES FOR ALL FUELS

# MONCRIEF'S "Years Ahead"

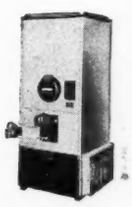
## ALL FUELS AIR CONDITIONING UNITS

- ★ Automatically welded gas-tight . . . leak-proof
- ★ Large Heating Surface
- ★ Extra long fire travel essential for gas and oil
- ★ Sturdy, enameled steel cabinets with interlocking slip joints
- ★ Full height blower compartment that connects to either side of the heating compartment

Series AC-700-F

Series C
Coal-Fired, Cast Gravity Furnace

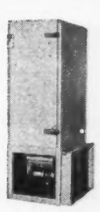
Series 700
Coal-Fired, Steel Gravity Furnace



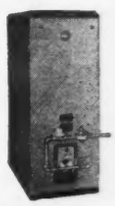
Series VU
Oil Fired, Steel Utility Air Conditioning Unit

Series P
Oil Fired, Steel Air Conditioning Unit

Series CL
Gas-Fired, Cast Iron Air Conditioning Unit



Series U
Gas Fired, Steel Utility Air Conditioning Unit



Series W
Gas Fired, Steel Gravity Furnace

**THE HENRY FURNACE COMPANY**

**Medina, Ohio**

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

# *Industry Groups*

*Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 20th.*

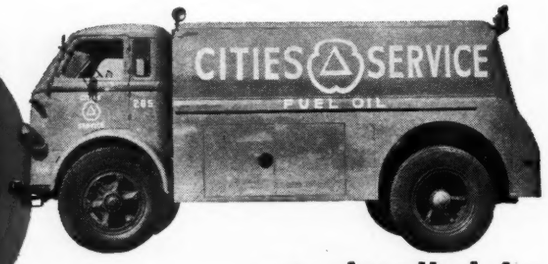
## Prepare Agenda For O.H.I. Directors Meeting

THE AGENDA for the two-day meeting of the Board of Directors, Oil-Heat Institute of America, Inc., New York 16, N. Y., has been completed. Sessions will be held at Wentworth-By-The-Sea, Portsmouth, N. H., on July 12 and 13.

On Monday, July 12, there will be a meeting of the Planning Committee and meetings of the Executive Committee of the Distribution Division and the Board of Directors of Oil-Heat Institute Associates. The Publicity and Legislative Committee is slated to report completely on its activities in connection with the oil supply problem.

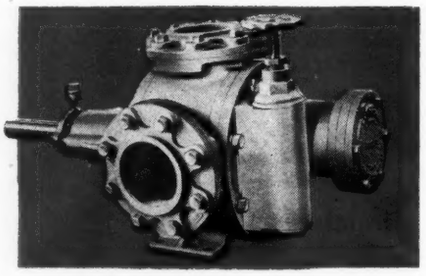
Reservations made directly with the Hotel indicate a large attendance at this regular mid-year Board meeting.


The Products of CITIES SERVICE




. . . . . are handled by

TRI-ROTOR PUMPS



To transfer its Koolmotor Oil and other petroleum products efficiently, Cities Service Oil Company relies on Yale & Towne's TRI-ROTOR...the *only* modern low-pressure pump that combines the high volumetric efficiency of a rotary pump with the positive handling characteristics of a piston pump.

The TRI-ROTOR's unique Variable Volume Control makes variable speed motors unnecessary, eliminates by-pass valves, and reduces over-heating, chewing, foaming and agitating of the material being handled.

It all adds up to quiet, safe, economical operation . . . and explains why Cities Service—like so many other famous oil companies—prefers Yale & Towne TRI-ROTOR Pumps for handling petroleum products.

Three head styles: Solid, By-Pass, Variable Volume—all interchangeable. Sizes: 5 gpm to 200 gpm.

*Send specifications for your pump requirements to the Yale & Towne Manufacturing Company, 213 Henry Street, Stamford, Conn., U. S. A.*

Makers of the famous Yale Lines of Locks, Hardware, Hoists and Industrial Trucks

TRADE YALE MARK

ECONOMICAL ROTARY ACTION—PROTECTIVE PISTON ACTION
ONLY TRI-ROTOR GIVES YOU BOTH IN ONE PUMP


## New England OHI Holds Second Convention and Show

FOUR DAYS of show and a day of convention was topped off with an all-day outing to conclude the second Biennial Exposition of the Oil Heat Institute of New England at Boston, June 7 to 11. Ninety exhibitors filled 121 booth spaces for a most attractive exposition. The first day was open to the public and the other three days attendance was confined to the trade. Among the exhibitors were many nationally known manufacturers as well as New England distributors for many other well known lines.

Feeling during the show was much more optimistic than during other shows this year, and exhibitors reported a brisk dealer interest in product displays. About 7,000 trade visitors were registered into the exposition.

The panel discussion, reported elsewhere in this issue, was conducted by Robert Gray, FUELOIL & OIL HEAT, who introduced the speakers and acted as moderator during a question and answer period.

Final event of the convention was the annual banquet with Harold W. Loveren, president of New England OHI as Chairman and Horace E. Davenport as toastmaster. Speakers were R. S. Bohn, president of OHI of America, and John T. Flynn, author, who spoke on "The Struggle of Our Time."

OHI of New England released a campaign of large space advertising in the newspapers throughout the area telling the story of "Oil to Heat More Homes." Copy was in the nature of a report to the people of New England on the oil situation, estimating that 350,000 new oilheating installations will be made this year in the country, of which New England will get its share.

Advertising copy also sold the Institute seal and the reliability of member dealers whose names were carried in advertising during the weeks of June 14 and June 21.

## Chicago Groups Hold Joint Annual Golf Party

THREE HUNDRED members and guests attended the annual golf party, sponsored jointly by Burning Oil Distributors Association and the Chicago Oil Burner Association, both Chicago. Those present included also members of

# Q

## How can you build your oil burner business profitably?

# A

Thousands of heating contractors can tell you the answer . . . give your customers a Petro. For fine Petro performance, outstanding fuel economy and long life will win their enthusiastic acclaim. Their friends and neighbors will hear about it . . . to your benefit and profit.

The Petro line incorporates the more than 45 years' know-how of the world's oldest, largest exclusive maker of oil heating equipment. It is obtainable through the established heating and plumbing jobber in your wholesale trading area who will gladly give you further details on Petro oil burners, boiler-burner units, furnace-burner units and water heaters.

PETRO
REG. U.S. PAT. OFF.
OIL BURNERS • BOILER-BURNER UNITS
FURNACE-BURNER UNITS • WATER HEATERS

**PETROLEUM HEAT AND POWER COMPANY**
**Stamford, Connecticut**

•

*Makers of Good Oil Burning Equipment Since 1903*

REFINERIES...FUEL OIL STORAGE AND DISTRIBUTION TERMINALS
NATIONWIDE OILBURNER SALES AND SERVICE FACILITIES

NEW H.C. Little CATALYTIC HEAT CONTROL PROVES

# Big Profit Builder

The demonstrated ability of the H.C. Little vaporizing oil burner to operate on catalytic oil WITHOUT SOOT OR CARBON . . . and with capacity increased up to 25% . . . has proved to be of utmost sales value in districts where . . .

1. **Only catalytic oil is available, or**
2. **Where catalytic furnace oil is sold at 3¢ to 4¢ a gallon LESS than the lighter oils.**

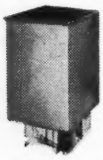
**These Well-Established H. C. Little Features:**

- Simple, vaporizing burner design—
- No motors, blowers or moving parts—
- No noise, no hum or roar—
- EXCLUSIVE H. C. Little electric ignition that lights itself—no pilot fire.

Winter Air Conditioner

Wall Furnace

**Plus the money-saving catalytic heat control add up to a terrific sales story, particularly with these furnaces especially designed for small homes.**



Floor Furnace

**Branches in 18 Principal Cities**

*Inquiries from dealers in the Midwest and East will receive prompt attention.*

H.C. Little Burner Company

**Dept. 7, San Rafael, Calif.**

**Top:** *Frank Belmont receives COBA trophy from Pres. H. G. Shaffer.*

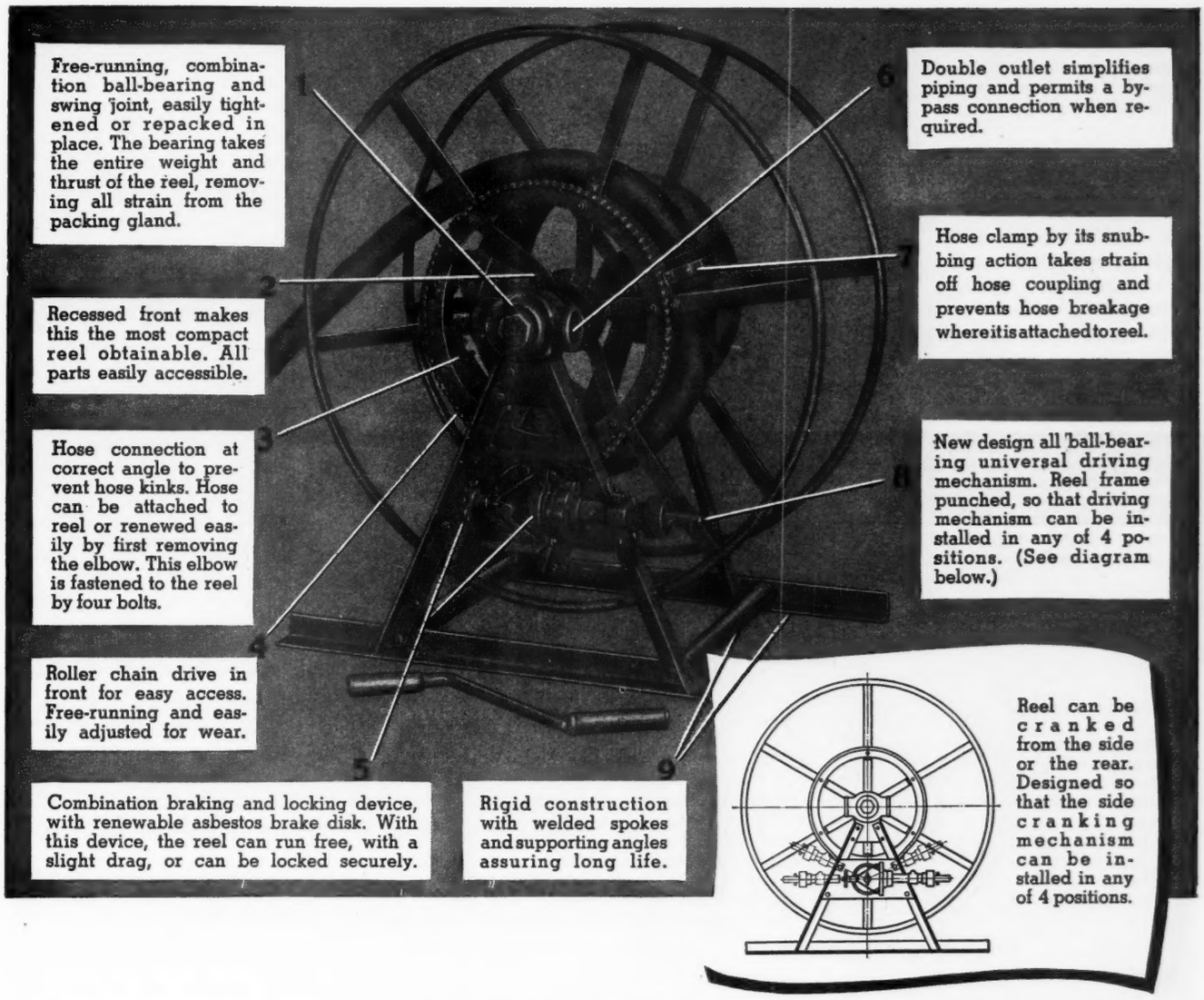
**Middle:** *Pres. Carl R. Jonswold awards BODA cup to P. M. Doepel.*

**Bottom:** *The "Bill Kemp" Trophy is presented to W. H. Gearhart by J. W. Owens, Chairman. (Photos by Fossen)*

the Old-Timers' Club of the Oil Burner Industry, Inc. Held at the Medinah Country Club, Chicago, on June 3, the outing featured excellent golf scores and a luncheon and dinner, with prize awards, but without speeches.

John E. Wagner, Kutten Brothers, Wilamette, Ill., won the prize for low gross, with a score of 71, followed by Joseph Reidy, Wood River Oil & Refining Co., who carded a 79. The BODA cup, won by Paul Doepel, Braun Bros. Oil Co., with a score of 79, was presented by C. R. Jonswold, president, Burning Oil Distributors Association. Runner-up in this division was R. L. Johnson, Hughes Oil Co., with an 80. President H. G. Shaffer, Chicago Oil Burner Association, presented the COBA trophy to Frank Belmont, Braun Bros. Oil Co., whose score of 71 bested the 83 posted by O. K. Moore, Automatic Oil Heating Co. The "Bill Kemp Old-Timers' Trophy," contenders for which were scored on the Peoria system, was taken by W. H. Gearhart, Mercoid Corp. J. W. Owens, Club Chairman, made the presentation. Dayle G. Malone, Petroleum Heat & Power Co., was runner-up.

Approximately sixty - five other awards, including door prizes, were


1
Free-running, combination ball-bearing and swing joint, easily tightened or repacked in place. The bearing takes the entire weight and thrust of the reel, removing all strain from the packing gland.
2
Recessed front makes this the most compact reel obtainable. All parts easily accessible.
3
Hose connection at correct angle to prevent hose kinks. Hose can be attached to reel or renewed easily by first removing the elbow. This elbow is fastened to the reel by four bolts.
4
Roller chain drive in front for easy access. Free-running and easily adjusted for wear.
5
Combination braking and locking device, with renewable asbestos brake disk. With this device, the reel can run free, with a slight drag, or can be locked securely.
9
Rigid construction with welded spokes and supporting angles assuring long life.
6
Double outlet simplifies piping and permits a by-pass connection when required.
7
Hose clamp by its snubbing action takes strain off hose coupling and prevents hose breakage where it is attached to reel.
8
New design all ball-bearing universal driving mechanism. Reel frame punched, so that driving mechanism can be installed in any of 4 positions. (See diagram below.)
Reel can be cranked from the side or the rear. Designed so that the side cranking mechanism can be installed in any of 4 positions.

# *The New Hose Reel You Have Been Looking For*

**COMPACT, RUGGED, LIGHT IN WEIGHT, BALL-BEARING CONSTRUCTION THROUGHOUT**

The New Philadelphia Valve Co. reel is the finest reel built. It is compact, rugged, and light in weight. All parts are of steel, malleable iron, or bronze; no cast iron is used. It is ball-bearing throughout with hardened and ground races. (6 ball bearings are used.) It will never wear out.

The reel can be changed from top winding to bottom winding by reversing the hose connection and rotating the drum. All working parts and hose connections are in front and easily accessible. It is light in weight, a reel that holds 100 feet of 1½" hose, weighs only 93 pounds.

We can furnish hose reels in any size or shape. They can be furnished for installation either in bucket box at rear of truck or in underslung box on side of truck. Give inside dimensions of box when writing for information. Special reels can also be furnished for Airfield Refueling Pits and Ship Docks.

Delivery can generally be made in a few days after receipt of order. For sizes, prices, and dimensions, write for Catalogue No. 165.

**PHILADELPHIA VALVE COMPANY**

ARAMINGO AVENUE AND ONTARIO STREET, PHILADELPHIA 34, PA.

Oil Marketing Equipment Company, 321-325 Fremont Street, San Francisco 5, California

awarded, the most coveted of which probably was the television set won by Frank Dolezal, Bowser, Inc. Roy J. Thompson, Apex Motor Fuel Co., served as chairman of the arrangements committee, assisted by Charles F. Wallner, Modern Home Equipment Co. and F. B. Caldwell.

## DBMA Honors Sherman For Oil Supply Work

A RESOLUTION, adopted unanimously by the members of the Distillate Burner Manufacturers Association, honored R. M. Sherman, president, Silent Glow Oil Burner Corp., Hartford 6, Conn., for his efforts to obtain assurance of an adequate supply of fueloil for domestic installations. The resolution read in part:

"Whereas, it is the consensus of the members that the efforts of Rallston M. Sherman to have the petroleum suppliers give full recognition to the requirements of American homes are a real contribution and in the best interests of the country.

Therefore, "Be it resolved, that the Distillate Burner Manufacturers Association do hereby record its sincere appreciation to Mr. Rallston M. Sherman for the able and impartial manner in which he has presented the case of both the consumer and manufacturer."

The resolution was transmitted by H. R. Singleton, Florence Stove Co., Gardner, Mass., and Association secretary.

## ASHVE Semi-Annual Meeting At Bretton Woods, N. H.

THE SEMI-ANNUAL MEETING of the American Society of Heating and Ventilating Engineers, New York 10, N. Y., was held June 20-23 at the Mt. Washington Hotel, Bretton Woods, N. H. Morning technical sessions on the last three days included papers on heat pumps, solar heat gain through walls and roofs and ground temperature distribution with a floor panel heating system. Afternoons were devoted to special committee and other meetings, sports and social events. A banquet on the evening of June 23 concluded the program.

## Wisconsin Association Discusses Publicity Program

A REGULAR MEETING of the Wisconsin Oil-Heat Association, Inc., Milwaukee 2, Wis., was held on May 27 at the Wisconsin Hotel. A report made to the members revealed that President Walter J. Schroeder, together with H. M. Mottram, secretary and the chairman of the Association's Advertising Committee, had been attending meetings called by the American Petroleum Institute to further the cause of public relations. In addition, the Association is working with the Oil-Heat Institute of America's Public Relations Counsel to formulate a local publicity program.

Also announced was the selection of August 13 as the date for the annual golf tournament. The affair will be held at Merrill Hills in Waukesha County.

## Oregon Fuel Merchants Hold Two Meetings

A RECENT BULLETIN, issued by the Oregon Fuel Merchants Association, Portland 4, Ore., recounted details of two meetings held by the organization. On May 19 the group assembled at its annual meeting, preceded by a dinner. W. A. Matheson, manager, Williams Oil-O-Matic Div., Eureka Williams Corp., Bloomington, Ill., was the principal


YOUR BEST BUY IN '48...

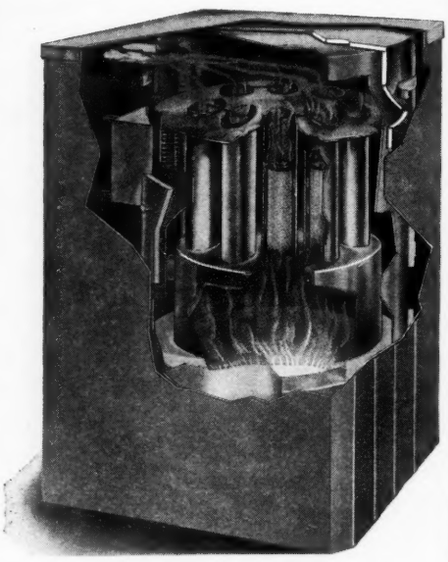
ACME DUAL 8

HIGH EFFICIENCY BOILER-BURNER UNIT

The amazing high efficiency of the Acme Dual "8" is due to the engineered design of the Stainless Steel intensifier tubes... which not only act as baffles but also radiate to the heating surfaces of the boiler tubes additional heat taken from the central gases which usually pass on to the chimney as waste. Their design also tends to maintain the same high temperature throughout the length of the tubes thereby producing much faster heating with a greatly reduced fuel consumption.

Beautiful, streamlined green wrinkle finished cabinet with chrome trim. Top covers easily removed for cleaning. Tankless water heater; removable type, 240 G.P.H. High Pressure boiler flues. Blanket insulation, 1½ in. rockwool. Heavy steel fire-box.

All accessories are conveniently and efficiently located on one side of the boiler making installing and servicing a simple task. The cabinet can be assembled after all piping has been completed.



Fast heat! Fast sales! Could you ask for anything better! Exclusive territories are still open for New Dealer Outlets. Write today for catalog and full details. Check the facts and you'll feature the Acme Dual "8" in '48.

ACME TANK AND WELDING

DIV. THE UNITED TOOL & DIE COMPANY

1031 New Britain Ave., Elmwood (Hartford), Conn.

*Easy to read at distances from all directions.*

**UNDERWRITER LISTED!**

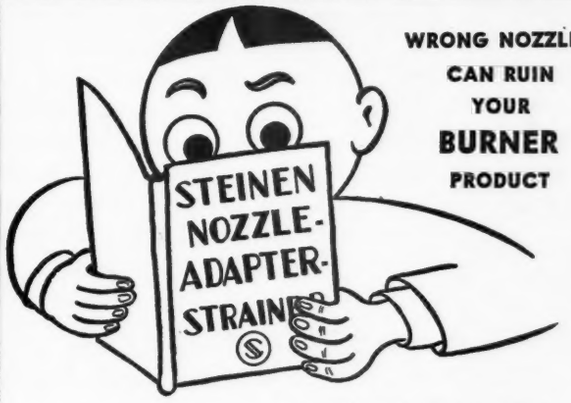
YOU take no chances with Sentry At-A-Glance gauges — for they are fully approved and listed as standard by the Underwriters Laboratories. Strongly built for extra long life, they will withstand more than 50 lbs. pressure per sq. inch. Simplified mechanism eliminates intricate parts which often cause trouble or wear out. Sentry gauges are designed and constructed at the factory to fit all tank sizes and shapes according to individual specifications. Economical . . . and guaranteed leak-proof.

*Write for details today.*

- NO SPRINGS
- NO CAMS
- NO GEARS
- NO MAGNETS

**KRUEGER *Sentry* GAUGES**

GREEN BAY • WISCONSIN




**WRONG NOZZLES CAN RUIN YOUR BURNER PRODUCT**

***What's Behind This Trade Mark***

STEINEN PRODUCT

NOZZLES

STRAINER

ADAPTER

Why it's so important to everyone who uses STEINEN products because it means better burner performance.

Dependable year in, year out. Backed by 40 years experience in the manufacturing of engineered products for some of the leading manufacturers in the country.

**WM. STEINEN MFG. CO.**
**Newark 5, N. J.**

OIL COASTAL COMPANY

*Petroleum Products*

EXECUTIVE OFFICES
NEWARK, NEW JERSEY

speaker. Reports were made by committee chairmen and a slate of officers was named for the coming year.

On June 25, the Association sponsored a Willamette Valley Group meeting, held in Salem, Ore. The meeting was intended for members in the towns of Salem, Albany, Corvallis, Lebanon and Eugene, Ore., but was open also to all members throughout the State.

### Predict Continued Demand At I-B-R Semi-Annual Meeting

AN ACTIVE and well sustained demand for boilers, radiators, baseboards, convectors, controls and accessories was predicted at the semi-annual meeting of the Institute of Boiler and Radiator Manufacturers, held May 11 to 13 at Absecon, N. J. Carroll M. Baumgardner, executive vice president, United States Radiator Corp. and Institute chairman, presided. Committee chairmen presented reports, as did Warren Harris, research associate, University of Illinois and Norman J. Radder, secretary, Plumbing and Heating Industries Bureau.

Professor Harris reported satisfactory performance of radiant baseboard in a prefabricated basementless house at Urbana, Ill. With the thermostat set to maintain 72° at the 30" level, Professor Harris revealed that slab surface temperatures in the center of the room never dropped below 67° and surface temperature of the slab one foot from the outside wall was 72° during zero weather. Average air temperature difference between the floor and ceiling was reported as varying from 1.7° in mild weather to 5° when outdoor temperatures were 5° below zero. In zero weather the average air temperature 3" above the floor was only 2° cooler than at the 30" level.

R. E. Ferry, general manager, reviewed high spots in Institute activities during the last ten years and pointed out that the I-B-R Research Program, established in 1939, resulted in the issuance of four installation guides, 228,000 of which have been distributed. Guide No. 1 is being revised to include mains up to 1½" on one pipe forced circulation systems and guides on baseboard and two-pipe reverse return hot water heating systems are to be issued shortly. Mr. Ferry reported success of the consumer advertising campaign, which has resulted in the distribution of 150,000 booklets. He also discussed the Institute's Short Course Program.

First steps in launching a field training program, were authorized at the meeting. Also authorized was the continuation of the Research Program at the University of Illinois. L. N. Hunter, vice president, National Radiator Co. and chairman of the Research Committee, recommended nine projects.

### Midwest Old-Timers' Club Planning August Outing

PLANS for an outing and golf tournament have been announced by the Midwest Division, Old-Timers' Club of the Oil Burner Industry, Inc. The affair, to be limited to present members of the Club or those who can qualify and apply for membership, is scheduled to be held on Friday, August 6 at the Biltmore Country Club, Barrington, Ill.

The Midwest Regional Director, Charlie Bendix, is in charge of the arrangements, assisted by Howard Maccubbin as chairman of the golf committee. Old-Timers desiring further information should contact Charlie at 1823 Carroll Avenue, Chicago 12.


MADE FOR PETROLEUM BULK STATIONS

*The New, Modern*

VIKING TWIN UNIT

FOR OUTSIDE OR INSIDE OPERATION

- WEATHER-PROOF
- DUST-PROOF
- WATER-PROOF
- EXPLOSION-PROOF
- NO PUMP HOUSE NEEDED

QUIET OPERATION

Gears and clutches are totally enclosed in oil, assuring quiet operation. Each pump can be operated separately or in unison.

Underwriter's Approved Unit

*Available Soon!*

Made for speed, economy and safety in handling two similar petroleum products. Underwriter's approved for inside or outside operation. Extra long stuffing boxes, stainless steel shafts. Each pump is geared to deliver 100 gallons per minute.

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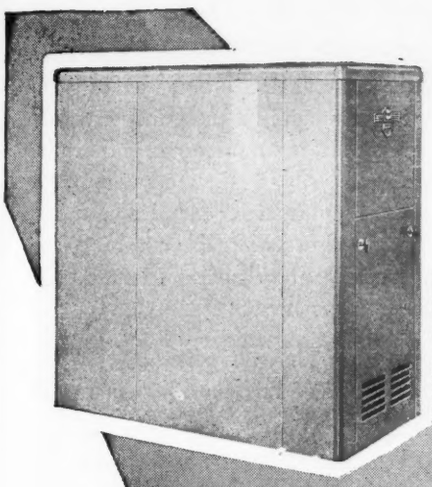
Viking PUMP COMPANY Cedar Falls, Iowa

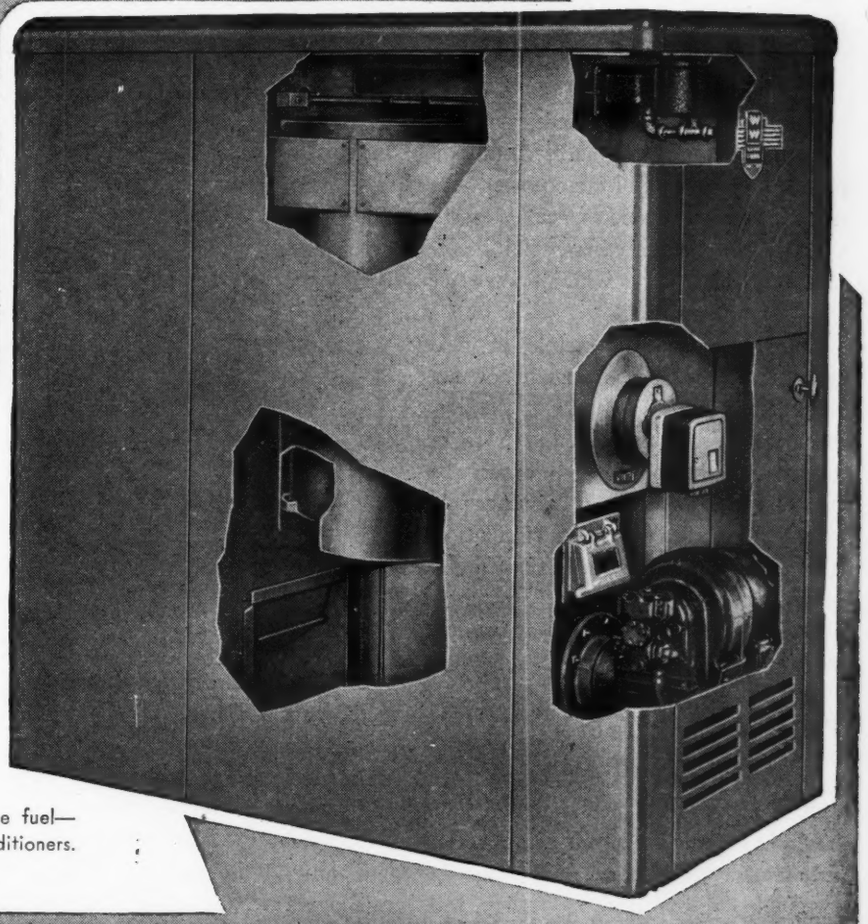


# Waterbury

## Oil Fired Air Conditioner

Whether you are installing a simple gravity job or the most complete air conditioner, it's what's under the casing that counts for your customer's satisfaction — and for a trouble-free sale for you.

**It's What's Under the Casing that Counts!**



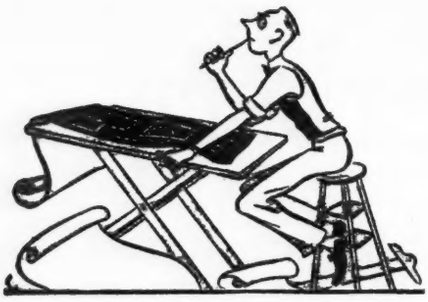
A modern, compact, attractive unit, economical to buy—economical to operate. It is enclosed in an eye-appealing casing that is a compliment to the most modern basement—but what is equally important to you—because of the efficiency and quality of what is UNDER that casing, you are saved annoying service calls.

Furnaces for every size home and every type fuel—from gravity models to complete air conditioners.

**THE WATERMAN-WATERBURY COMPANY**

1171 Jackson St. N. E. Minneapolis 13, Minn.

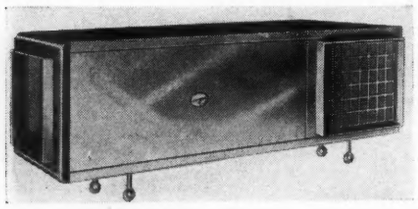
fueloil & oil heat



# New Products

## Gilbert & Barker Unit Is Ceiling Type Furnace

AN OILFIRED FURNACE UNIT, announced by Gilbert & Barker Mfg. Co., West Springfield, Mass., employs a model GCS gun type oilburner, and is of the ceiling-suspended type. With a capacity of 100,000 Btu, the unit weighs less than 500 lbs. Furnished completely assembled, with the burner already



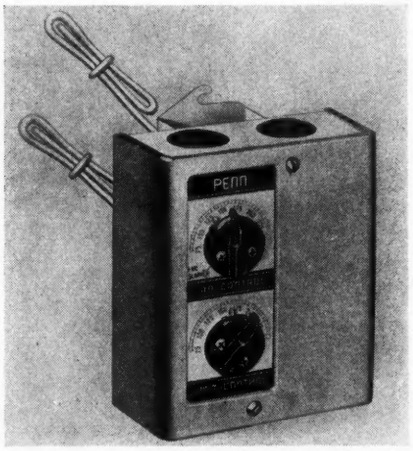
mounted and wired, it is necessary only to hang the unit in place, install oil piping and provide electric power supply. It is recommended especially for installation in garages, stores, small buildings and other places where floor space is at a premium.

The counterflow principle of heat transfer, by which movement of hot combustion gases is opposite to the flow of heated air, is employed. Air to be heated is drawn through filters by blowers, with two cold air openings providing ample area for return circulation. The unit's burner is equipped with Gilbarco's Economy Clutch, a patented action which reduces sooting at the start and stop of a firing cycle.

## Penn Fan and Limit Liquid Expansion Controls

LIQUID EXPANSION TYPE fan and limit controls, featuring a self-compensated diaphragm, have been announced by Penn Electric Switch Co., Goshen, Ind. The diaphragm construction is designed to nullify the effect of ambient temperatures, with the result that the controls respond only to furnace bonnet temperatures. This permits mounting advantages because the controls can be installed close to heat exchangers without special precautions to protect the diaphragms from heat.

Three models are available. Type 518 safety limit control, type 519 fan control and type 520 combination fan and




limit control. The new line incorporates also a magnaseal contact structure with a current-carrying capacity in excess of control rating.

## Dwyer Announces Portable $CO_2$ Indicator

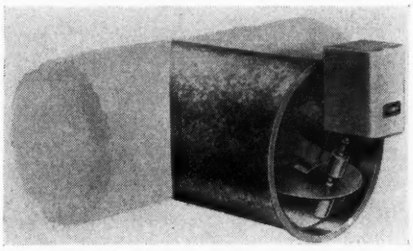
A $CO_2$ INDICATOR, recently announced by F. W. Dwyer Mfg. Co., Chicago, Ill.,

is constructed of transparent acrylic material, practically unbreakable, with metal parts of non-corroding stainless steel. The instrument has a full 4" scale, calibrated to 1/5 of 1% CO and employs pressure-tight "O" rings developed during the war as seals. Indicator is 8" long, 2" in diameter.

To operate, the scale is zero-set and a gas sample is pumped into the device with fifteen strokes of the aspirator bulb. The instrument is shaken and the $CO_2$ percentage read from the fluid level on the scale. The solution used is good for approximately a thousand tests, according to the manufacturer, and can be recharged easily. Designated model 600, standard equipment includes a metal carrying case with rubber tubing, aspirator bulb, absorbent solution and operating instructions.

## Sequence Draft Control Offered by Sampsel

A SEQUENCE DRAFT CONTROL for use with domestic oilburners, furnaces and boilers has been announced by Sampsel Time Control, Inc., Spring Valley, Ill. The control consists of a conventional barometric draft control, plus a thermostatically-activated sequencing unit to modify action of the barometric control when the burner is not operating. When the room thermostat is satisfied and shuts off the burner, it activates the sequence

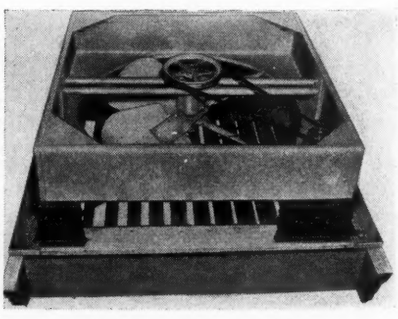


control to open the draft control after a time lag of approximately 30 seconds. This action permits natural chimney draft to continue, but causes it to bypass the heating plant.

When the thermostat again calls for heat, the sequence control acts first and returns the barometric control to normal operating position. The control may be used with any standard burner controls and is being offered as a package unit.

## Lau Blower Units For Buildings With Low Roofs

THE RANCHER, model R-303, is the latest complete blower unit offered by Lau Blower Co., Dayton 7, Ohio. Designed



# NEW! REVOLUTIONARY! MODERN!

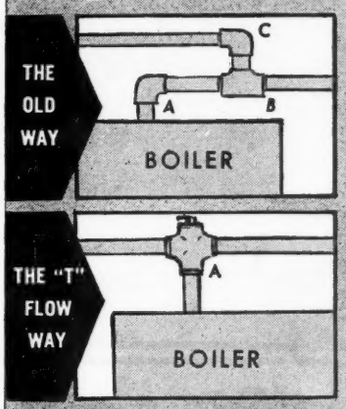
## The Only *TWO-DIRECTIONAL* FLOW CONTROL VALVE *AT NO EXTRA COST*

A masterpiece of engineering ingenuity . . . a simple advancement . . . yet essential to all Hot Water Circulating Systems.

- Sizes 1"—1¼"—1½"—2"
- Used also as one-directional flow control valve
- SAVES LABOR
- SAVES TIME

**AT NO EXTRA COST**

PAT. PEND.




*Water circulated from boiler through old "one-directional" flow valve (A), continues to T-Joint (B) and is partially diverted to L-Joint (C) where finally "TWO-DIRECTIONAL" flow is reached.* **RESULT** *. . . unbalanced circulation, more work involved in installations, more piping and fittings needed, greater costs in time and materials.*

*Water circulated from boiler to QUALITY "T" Flow Control Valve (A).* **RESULT** *. . . immediate "TWO-DIRECTIONAL" flow, balanced circulation, less piping and fittings needed,* **LESS** *costs in time and materials.*

## "SWEAT-ADAPTER" ELIMINATED WITH THE *Bronze* . . .

## SWEATFLOW Control Valve

PAT. PEND.

**AT NO EXTRA COST**

"Sweatflow" Control Valves are designed especially for direct "sweat" connections with copper tube installations in all Hot Water Circulating Systems . . . without the use of "sweat-adapters." Sizes 1"—1¼"—1½"—2". This is a modern heating advancement developed by the engineers of the Quality Specialty Company, Inc., of Philadelphia.

**More architects, builders, engineers and heating contractors are demanding . . . QUALITY "QS" PRODUCTS.**

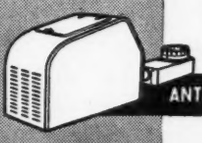
- Automatic Heating Equipment
- Indirect Drive Hot Water Circulators
- Direct-Drive Hot Water Circulators
- Flow Control Valves

**SEE YOUR JOBBER OR WRITE DEPT. F-1 FOR INFORMATION**

**QUALITY SPECIALTY COMPANY, INC.**
*MANUFACTURERS*
**211 N. 2nd STREET • PHILA. 6, PA.**

# More Profit through "Single Source" purchasing!

YOU can stop shopping around . . . quit trying to sell unknown, untried products. Now, every type of heating equipment is available from ANCHOR . . . a single dependable source for a complete and carefully engineered line. Tie up with ANCHOR . . . and you tie up with a company whose products have kept pace with the latest developments in the heating field *for over 80 years.* Write today for literature on any or all the ANCHOR products shown below. Anchor Division, Stratton & Terstegge Company, Inc., P. O. Box 311, New Albany, Indiana.



**ANTHRACITE AND BITUMINOUS STOKERS**

Domestic . . . Commercial . . . Industrial Models for every building requirement.

ANCHOR STOKER

**OIL FIRED FURNACE**

With Automatic Winter Air Conditioner.

ANCHOR AIRE

**GAS FIRED FURNACE**

With Full Automatic Controls.

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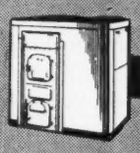

**COAL FIRED FURNACE**

Round and square cased types . . . from small home-heating sizes to heavy duty models for industrial plants.

ANCHOR AIRE

**OIL BURNER**

Fully Automatic . . . The Ideal Conversion Unit.

ANCHOR OIL BURNER

**DOMESTIC BOILERS**

For Hot Water or Steam. Tank or Tankless.

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Also manufacturers of ROUND OAK Gas & Electric Ranges

# ANCHOR

*America's Finest Heating Equipment*

for buildings or dwellings with low pitched roofs, the Rancher incorporates features such as fire-resistant sheet metal plenums, air-tight cushion seal-sealed bearings for all moving parts.

It employs a four-bladed fan, horizontal mounted, with vertical air flow and belt drive. A completed installation leaves visible only the automatic ceiling shutter, and permits easy removal for servicing. Model R-303 has four 30" blades, powered by a 1/3 hp motor, with free air delivery rating of 6900 cfm.

### Watts Vuethru Meter Sets Fit All Standard Models

FUELOIL METER TICKETS, designed to fit all standard printing meters, are being produced by Alfred Allen Watts Co., Inc., Belleville 9, N. J. Known as Watts Vuethru Meter Sets, there is a choice of five standard forms, plus an all purpose form for companies having different meters on their trucks. To eliminate the use of the overlying carbon, Vuethru, a translucent chemically-treated paper, was developed. Used in the first position, with a double face underlying carbon, clean readable gallonage impressions are reproduced on all copies. Vuethru is water and oil repellent and will not wrinkle or curl in wet weather.

The company is offering blank forms or forms imprinted with company name and address. Also, there can be furnished meter tickets on standard forms with fill-ins printed to order or redesigned forms to any required specification. Third copy of the sets is printed on card stock, which is durable and stiffens the entire set for ease in handling.

### Wishman Line Of Power Hose Reels

EIGHT MODELS of power hose reels are offered by R. H. Wishman Co., Buffalo 9, N. Y., available for both side and rear truck mounting. Trial tests are quoted by the manufacturer to show the reel can rewind a length of 1¼" x 150' truck tank hose on dry pavement in as little as 30 seconds, with speed controlled by a push button located near the reel. The reel is driven by a standard 6-volt electric starter, which revolves the shaft and drives the four main gears located internally, which starts the reel.

An auxiliary hand wind mechanism also is available, if specified. Other features include ball bearings on power drive and mountings, swing joint with removable packing seal feature and special elbow to prevent hose kinking.

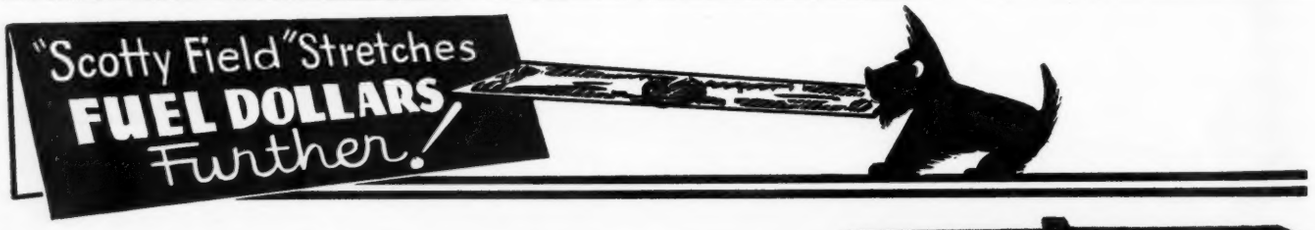
### Silent Glow Boiler Unit Fired With Air Seel Burner

THE NEW boiler-burner unit, recently announced by Silent Glow Oil Burner Corp., Hartford 6, Conn., is fired with a special short tube model 800 Air Seel gun type oilburner. The unit is rated at 500 sq. ft. of steam, 800 sq. ft. of hot water radiation, and each unit is supplied with a built-in domestic hot water coil to furnish an ample supply of service hot water.

Firing rates on burners shipped as part of the units vary from 1.0 to 1.65 gph and each burner is sent from the factory complete with three controls, nozzle and nozzle strainer.

### Yula Adds Water Circulator to Line

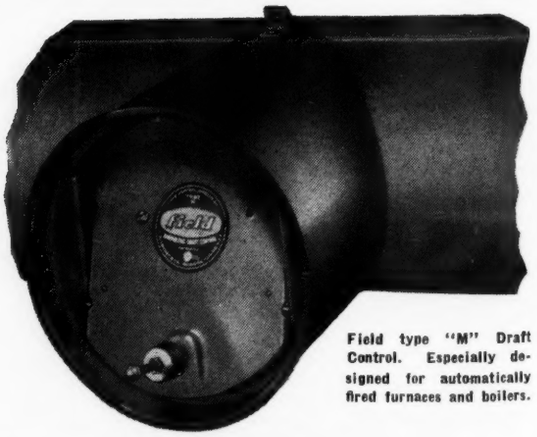
THE CIRCULATOR, introduced by Yula Water Heaters, Inc., New York 63, N. Y., provide quicker heating and more


These SAVINGS MEAN SALES . . .

Fuel economy and heat saving are important to today's home owner! Field automatic, barometric draft controls give fuel economy and save heat!

That's why dealers find it profitable and easy to sell the durable, efficient Field barometric draft control, "The Best for the Finest" in heating equipment.



Field type "M" Draft Control. Especially designed for automatically fired furnaces and boilers.

FIELD CONTROL DIVISION
H. D. CONKEY & COMPANY MENDOTA, ILLINOIS

AFFILIATES:
CONCO MATERIALS HANDLING DIVISION
CRANES—HOISTS

field REGISTERED
BAROMETRIC DRAFT CONTROLS

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CONCO BUILDING PRODUCTS, INC.
BRICK—TILE—STONE

# Here is a moneymaker for you!

Every Oil-Burner Dealer in the country knows that FULFLO Filters lead all others in sales because they lead in performance. But most home-owners don't even know that they need a filter!

This little Folder tells the home-owner briefly and forcibly why he needs a Filter, why FULFLO is best, and where he can get it . . . from you!

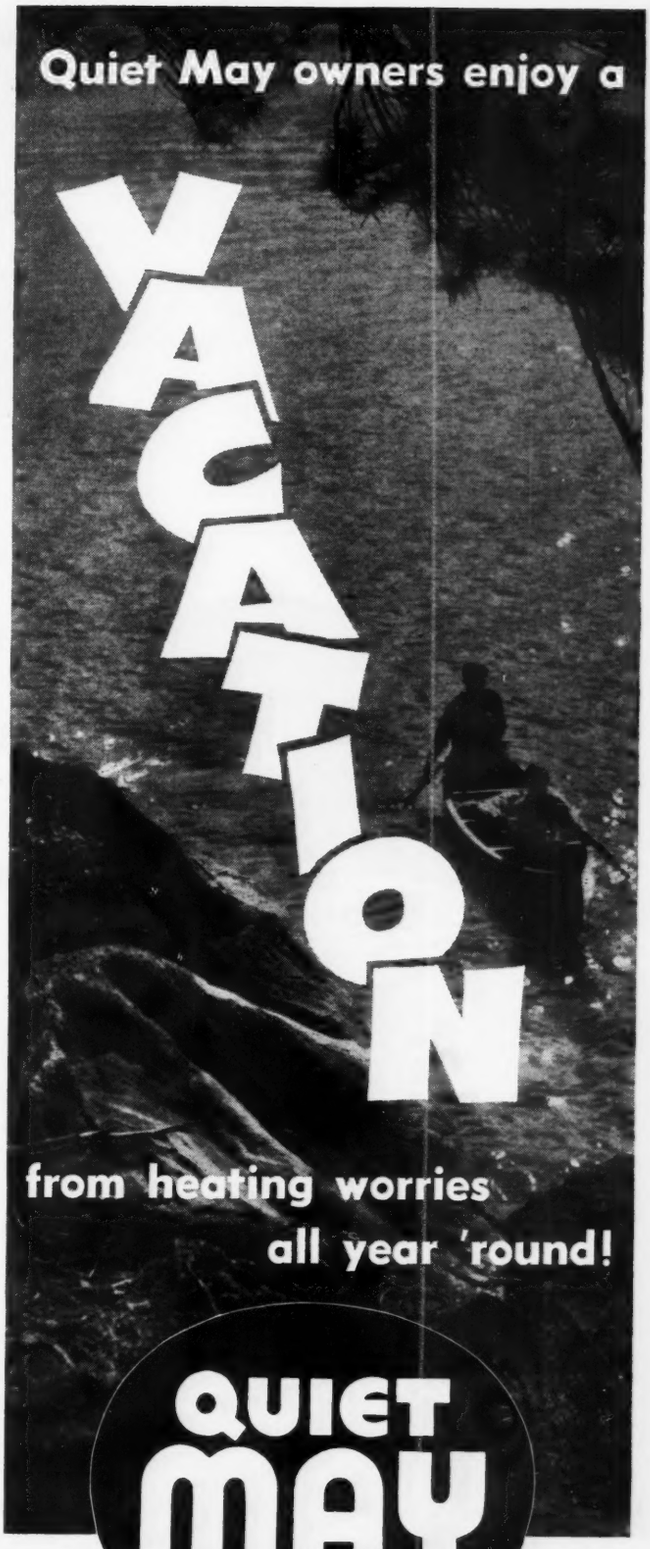
Ask your jobber to get you a couple of hundred or so of these Folders* with your imprint. Enclose them with your monthly statements or mail to a selected list of home-owners. They'll go right to work for you.

And REMEMBER . . . it isn't merely the Filter Sales that count. While they show an attractive profit, the main point is that whenever you sell a FULFLO Filter you can scratch that house off the list of installations requiring costly and bothersome service calls.

***Ask for folder PL-177 for B4 and B6 FILTERS**

*Commercial Filters Corporation*

BOSTON 27, MASSACHUSETTS

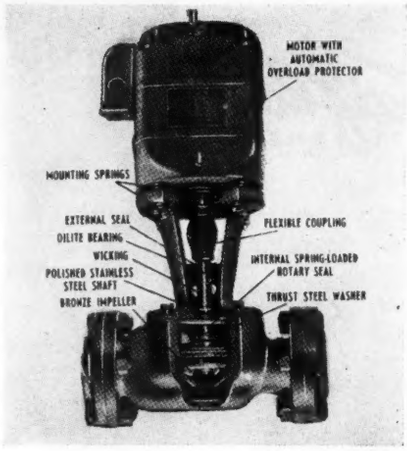



# QUIET MAY OIL BURNER

**For the facts on available dealerships, write:**
**MAY OIL BURNER division of Gerotor May Corp.**
**P. O. Box 86, Baltimore 3, Md.**

even distribution of heat in forced hot water heating systems, and may be used also with a low or far distant domestic hot water storage tank to speed up circulation. Four sizes are offered, to accommodate pipe sizes ranging from 1" to 2", with capacities of 27, 36, 47 and 73 gpm. The circulating pump has a cast-iron body and 60 cycle split phase, spring-mounted motor, with safety thermal cut-off and bronze bearing.

Oilite bearings and oil reservoir provide lubricating capacities for long period, while an oil seal protecting bearings from dust and prevents escape of oil. Units are provided with flanges to simplify installation and a stainless steel shaft assembly, containing brass disc, bronze impeller, brass lock nut, graphite washers, neoprene ring, tension spring and special steel washer. A rotary type automatic water seal eliminates stuffing boxes and packing rings.



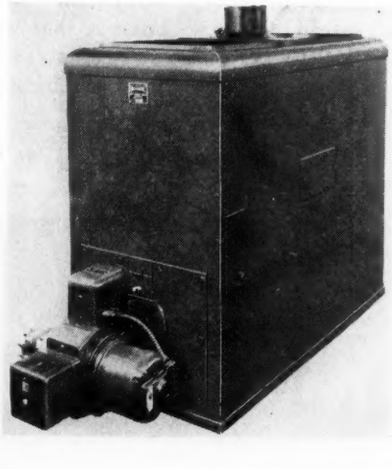

## Roylyn 1300 Series Quick Sealing Couplings

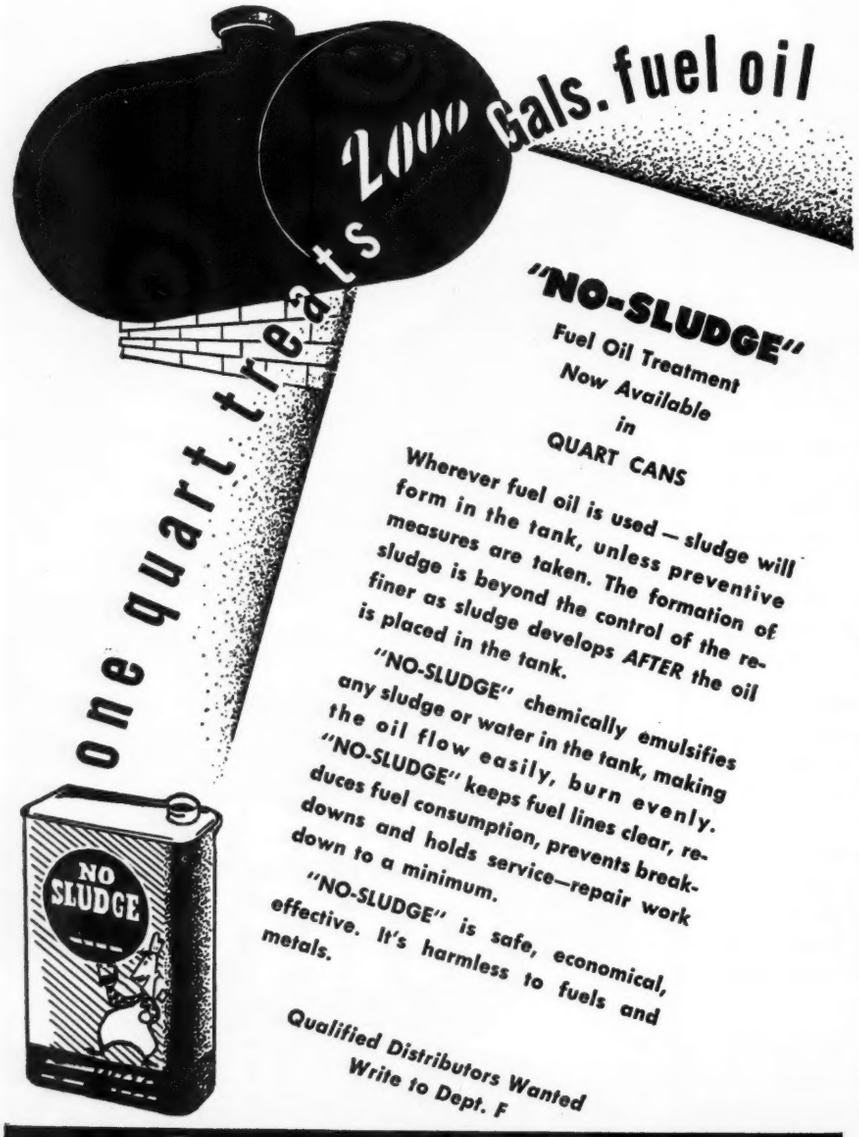
THE 1300 SERIES couplings, developed by Roylyn, Inc., Glendale 3, Calif., combines an automatic sealing feature with a patented quick-disconnect principle. Couplings can be furnished with a valve in either or both halves of the coupling, and when used together the valves are mutually activating to open when connected and close when disconnected. A valved coupling used with an open nipple, results in the nipple end opening the valve upon connection. When an open coupling is used with a valved nipple, the latter is opened only by flow, thus giving a check valve action.

Series 1300 couplings are available from ¼" to 2", in Dural, bronze and steel. Recommended for petroleum handling applications, couplings use a full swivelling action to prevent kinking.

## Quiet Automatic Furnace Available In Four Sizes

A FURNACE UNIT that has been completely assembled and tested at the factory has been developed by Quiet Automatic Burner Corp., Newark 4, N. J. Furnished with oil or gas burner, plus electronic control or relay, the unit is ready to operate, with furnace, blower, humidifier and casing assembled. Four available sizes are rated at 70,000, 90,-




"NO-SLUDGE"
Fuel Oil Treatment
Now Available
in
QUART CANS

Wherever fuel oil is used — sludge will form in the tank, unless preventive measures are taken. The formation of sludge is beyond the control of the refiner as sludge develops AFTER the oil is placed in the tank.

"NO-SLUDGE" chemically emulsifies any sludge or water in the tank, making the oil flow easily, burn evenly. "NO-SLUDGE" keeps fuel lines clear, reduces fuel consumption, prevents breakdowns and holds service—repair work down to a minimum.

"NO-SLUDGE" is safe, economical, effective. It's harmless to fuels and metals.

Qualified Distributors Wanted
Write to Dept. F

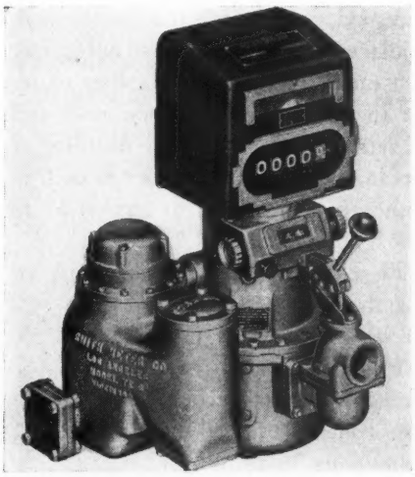
Dominion CHEMICAL CO., Inc.
WATER CONSULTANTS AND CHEMISTS
FOR INDUSTRIAL AMERICA
11 WEST 42nd ST. • NEW YORK 18, N.Y.

000, 155,000 and 200,000 Btu output.

The unit is sealed completely to prevent cellar air from leaking in and to prevent dust from leaking into the cellar. Installation requires only setting the unit in place, connecting to stack and oil tank and electrical outlet.

## T-6 Smith Oil Truck Meter Has Capacity of 60 Gpm

VARIABLE MOUNTINGS, forged steel flanges and choice of counters are features of the new 60 gpm T-6 truck



meter, offered by Smith Meter Co., Los Angeles 22, Calif. Numerous mounting arrangements are possible from four basic positions and meters can be changed from right to left hand, or vice versa. Types of counters available include those with small or large numerals, set-stop mechanisms, ticket printers and totalizers. Forged steel flanges allow screwed pipe connections or tubing lines welded directly to flanges.

The meter employs 1½" pipe size, has a flow capacity of 60 gpm and operates on the Smith rotary principle. The company also makes truck meters in 100 and 150 gpm capacities.

## Universal Valve Offers Flush-Type Fill Boxes

FLUSH-TYPE FILL BOXES, a product of Universal Valve Co., Elizabeth, N. J., are made of heavy cast-iron, ribbed for strength and for imbedding in concrete. Cap threads are standard pipe threads to permit tight connection with the filling nozzle and caps are bronze construction, grooved for an oil-proof leather gasket. Square type iron wrench is furnished.

Caps, in 2" size only, are cadmium plated inside and outside for protection against corrosion. Model No. 700 is the conventional type of fill box, while model No. 530 incorporates the words "Fuel Oil" cast on the cap body.

## Combination Burner Uses Natural Gas and Fueloil

AN AUTOMATIC BURNER, developed by Midwest Research Institute, Kansas City, Mo., utilizes natural gas during mild weather and switches to fueloil in severely cold weather. Developed on a research project sponsored by The Gas Service Company of Kansas City, the burner evolved from a study the Institute was conducting on the problem encountered by gas distributing systems in supplying gas for home heating during periods of severe weather. Analysis revealed that a permanent answer was not to be found solely in increasing pipe line and distribution facilities, due, in part, to the fact that increased demand for fuel during a few cold spells might make excessive the investment needed to expand facilities.

Gas is burned in a conventional man-

**Walter Czarnecki**

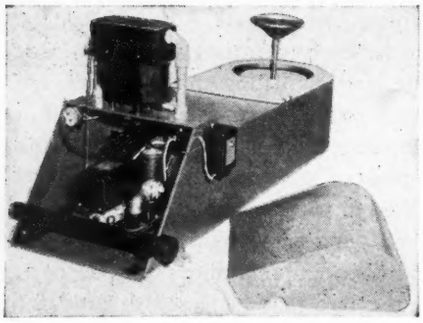
**1882-1948**

**It is with deepest regret that we announce the death of our Founder and President, Walter Czarnecki.**

**Walter Czarnecki became interested in the oil burner field 30 years ago and pioneered in the development of equipment to improve the industry. His desire for perfection established for Eddington Metal Specialty Co. a reputation for quality products. His leadership was an inspiration to all who worked with him.**

**EDDINGTON METAL SPECIALTY CO.**

**EDDINGTON, PA.**



ner in the unit, which employs also a vaporizing oilburner, built into and around the gas system so that many parts are interchangeable. Parts performing one service in the gas cycle, also perform a service in the oil cycle. Oil flows into a shallow pan where it is heated and evaporated by a small gas flame, consuming a negligible amount of gas compared to the amount required to heat a house. In the event of a complete gas failure, the equipment still can be operated. An outside thermostat switches over from gas to oil at a predetermined temperature and automatically switches back again when the weather has moderated.

The Institute is exclusive licensing agent for equipment patents and it is planned to license firms on a non-exclusive basis to stimulate production of as many units are possible.

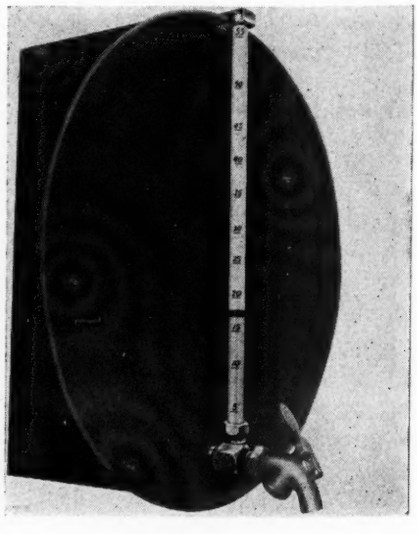
### OEM Stainless Steel Combustion Chambers

ADJUSTABLE stainless steel combustion chambers, available from Oil Equipment Mfg. Corp., New Haven 6, Conn., are usable through a range extending from 1.0 to 2.25 gph. Type 446 is constructed of a low carbon, high chromium stainless steel alloy, resistant to corrosion and oxidation at high temperatures. A similar model is available also in Inconel, 80° nickel, noted for its ability to resist the effects of combustion gases and to retain its strength and ductility at elevated temperatures. Other models, in both types, are made to size—1.35 to 1.65 gph and 1.0 to 1.25 gph.

Blast tube openings on delivered chambers are 4" in diameter, with scored circles provided for punch-outs to obtain openings of 4½" and 5". Stainless steel chambers are recommended for wet base boilers or forced air units, the Inconel units for conversions where backfill is necessary. Also available, as a companion piece, are five sizes of stainless steel firebox baffles, ranging in size from 12" to 24".

### Tru-Oil-Gage For 55 Gallon Drums

TRU-OIL-GAGE for 55 gallon drums is ready for immediate delivery, according to its manufacturer, Kingston Mfg. Co., No. Plymouth, Mass. The gauge is furnished complete with a heavy bronze T-fitting and parts needed to attach to any standard drum or faucet, and in-

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**R & I #3000 Refractory Cement for patching.**

**R & I Combustion Chambers for any job from 1.25 to 2.50 gals. oil per hour.**

**R & I Insul-fil Rockwool Insulation for packing between combustion chamber and cast-iron base.**

**R & I Black Furnace Cement for sealing metal joints and sections of boilers exposed to heat.**

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***Your supply house has these R & I products.***

**REFRACTORY & INSULATION CORP.**

**116 Wall St., New York 5, N. Y.**

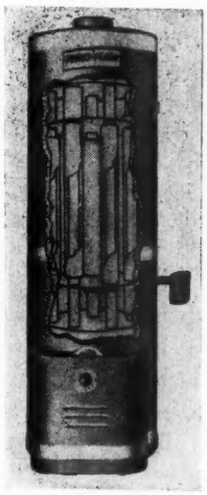
**Chicago 4, Ill., Newark 2, N. J., Philadelphia 3, Pa.**

cludes a bracket for securing to the top rim of the drum and a brass cap and screen air vent.

A plastic tube extends from the T-fitting in the faucet to the top of the drum, calibrated at 5 gallon intervals. It operates on the principle of liquid seeking its own level, which is indicated by a red cork float in the measuring tube. It is especially designed for use with fueloils, and is meant to fit any 55 gallon drum, with ½" leeway for variation. Mastercraft Products, Boston 11, Mass., is exclusive distributor.

### Perco-Flash Water Heater Announced By Kresno-Stamm

A NEW PERCO-FLASH hot water heater, developed by Kresno-Stamm Mfg. Co., Palisades Park, N. J., available in two sizes, 6 and 26 gals., is fired with a Ball Flame vaporizing burner. The fully assembled unit achieves fast heating by circulating at high speed a small stream of water over a large heated area, and passes hot gases from burner combustion through vertical fire tubes.



Water from the mixing supply chamber flows downward through a central tube and as it hits the fire plate it splashes, partially vaporizes, and rises into the space between the concentric inner and outer tube. A portion of the water so heated is recirculated through the equalizing tube rising into the cold water supply chamber above, where it mixes with cold water coming from the supply inlet.

The high speed circulation of hot water is designed to minimize lime formations and prevent clogging or corrosion. Ball Flame vaporizing burners used in the heater employ a patented principle of mixing vaporized oil and air by forced draft.

### Therm Range Burner For Conversion Use

SUPER-THERM combination burner announced by Therm Gas Generator Co., Inc., Seattle, Wash., is designed to convert to oilburning any kitchen or cook stove. The unit burns 30 to 34 gravity fueloil and can be regulated from low to high flame. Installation does not require removal of grates, nor is special firebox lining required.

A Detroit float valve is standard equipment on the burner, which is constructed of heavy steel with electrically welded seams and joints to eliminate breakage and air leaks. Forced air cooling also is provided to eliminate excessive metal temperatures.

### Foamglas Pipe Insulation For Use On Hot Or Cold Lines

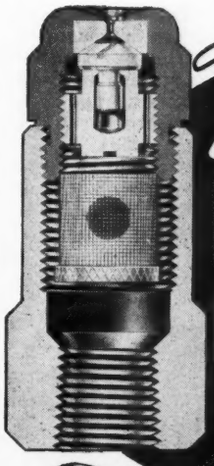
FOAMGLAS pipe insulation, of cellular glass construction, developed by Pittsburgh Corning Corp., Pittsburgh, Pa., is available for applications on either hot or cold lines, through a temperature range of plus 800° F. to minus 200° F. The new product is composed of the same material and possesses the same characteristics as Foamglas blocks and shapes being used for tanks, ducts and breechings and Foamglas slabs used for


WIN FRIENDS FOR OIL HEATING

Oil burner servicemen can build goodwill for the industry — and themselves — through **PREVENTIVE MAINTENANCE.**

Clogged nozzles are a frequent cause of oil burner failure. You can practically eliminate this common trouble by replacing the nozzle each year when you make your regular service check-up. A lot better for you and your customer than waiting until the burner fails to function.

*Always specify Delavan*



Balloffet Design NOZZLES by DELAVAN for DEPENDABLE, EFFICIENT PERFORMANCE

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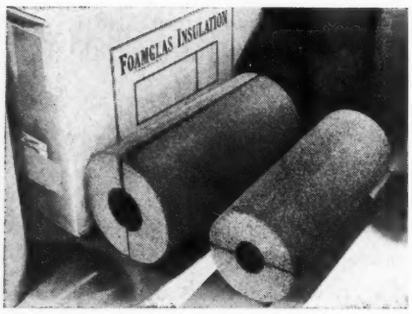
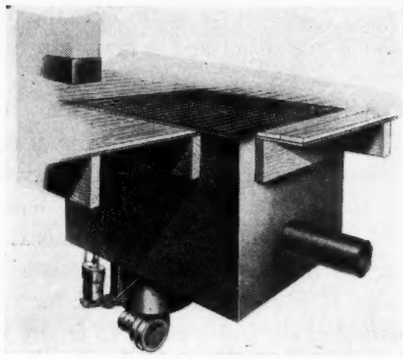



roof, wall and floor insulation.

The pipe insulation is non-combustible, acts as a fire retardant and, in addition, is waterproof and vaporproof. Composition is rigid, light in weight, and easy to cut and fit with ordinary tools. Being inorganic, as well as impervious to water vapor, Foamglas is claimed to be durable and capable of outlasting the piping or equipment on which it is installed.

### Gillen Floor Furnace Features Forced Draft

ADDITION of a motor and blower attachment to the Gillen floor furnace, manufactured by J. L. Gillen Co., Dowagiac, Mich., provides forced draft distribution. The unit delivers an approximate output of 52,500 Btu/hr and measures 48" overall height, 37" long and 25" wide.

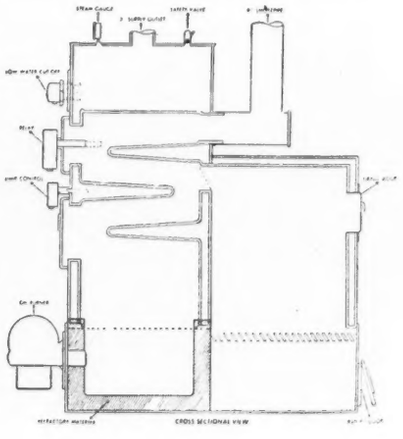


Oil flow is controlled automatically by a room thermostat but may be regulated manually by the unit's floor level control rod. A constant level oil control valve, with antiflooding device, and a safety limit control bulb to prevent overheating, are standard equipment. A floor grille is furnished as part of the assembly and the entire combustion chamber may be lifted out.

### Diesel-American Unit Burns Either Oil or Coal

DEVELOPMENT is announced by Diesel Oil Burner Corp., Jamaica, N. Y., of a boiler-burner unit which permits the use of either oil or coal, depending on preference or availability. Conversion from one fuel to the other is effected by the flip of a switch, actuating a manual damper between the coal compartment and oilburner compartment. Opening the damper to change to coal automatically shuts off electric current preventing burner operation. When heat is required from the oilburner, the damper from the coal compartment must be shut before the burner will start.

A DA-O Diesel-American gun type




# MONARCH BURNER ACCESSORIES

## AIR CONES AND STABILIZERS

F-57 H-215

New air cone-stabilizer combinations are now available for 3⅞" and 4½" I.D. air tubes.

Monarch combinations have been used as original equipment by burner manufacturers for many years and dealers have used thousands of them to make old burners more efficient. Eliminate guesswork—Use this tried and tested equipment and be sure of *results*.

Equipment for 3½", 3⅞", 4", 4¼", 4¾", 6" and 8" I.D. air tubes in stock.

**Atomizing Nozzles**

Preferred Because:

1. Each nozzle is individually tested and checked for capacity against the flow of a calibrated master sample. Capacity tolerances are as low as plus or minus 2½%.

2. Standard nozzles will fire most gun type high pressure burners satisfactorily, but special series are also available for burners requiring specified spray characteristics.

**Replacement Valves**

Monarch piston type pressure regulating and cut-off valves are available in several models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode.

Write for Catalog D

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oilburner, flange-mounted, is provided for oilfiring, along with a precast combustion chamber. The coal side has a firebox on grates which will hold sufficient coal to operate normally from 8 to 10 hours without refilling. All necessary controls and accessories are furnished as standard equipment. Six sizes of boilers will be available, ranging in capacities from 350 to 1400 sq. ft. of steam radiation, 550 to 2000 sq. ft. of hot water radiation. Units feature also tankless coils for domestic hot water and a low water alarm.

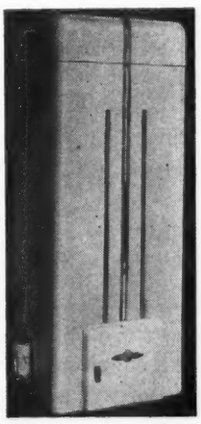
## McRay Treater Controls Boiler Electrolysis

MCRAY PROTECTO ROD, available from McRay Sales Co., Pasadena 1, Cal., is a series of zinc and copper plates, mounted in series, designed to control boiler electrolysis, remove scale and prevent its formation in hot water heaters. When submerged in water, the plates set up an electromotive force which render inert the salts and minerals and, at the same time, removes scale and corrosion.

Installation is accomplished easily by inserting Protecto Rod at the hot water outlet and suspending it in the water. Regular size for household use handles a capacity of 300 gallons of water per day, and larger sizes are available. Peck and Co., Newton, Mass. are New England and New York State distributors for the devices.

## Perfection Model 450 Storage Water Heater

SUPERFEX MODEL 450, new storage type oilfired water heater has been announced by Perfection Stove Co., Cleveland, Ohio. It is fired with a vaporizing burner, has a storage capacity of 50 gal., with water temperature raised 60° at a rate of 60 gph. A smaller size, model 430, has a 30 gal. storage tank, 60° temperature rise in an hour. The larger model occupies less than 4½ sq. ft. of floor space; the small, less than 3½ sq. ft.



Construction affords 25% more heating surface than conventional heaters, it is reported, with radiant heat loss minimized by a heavy mat of fiberglas insulation at the top, and confined air space between tank and casing. The burner compartment is sealed against dirt, dust and floor drafts. Perfection's "midget pilot" meters fuel to the burner during both pilot and high fire operation, and the unit features also a sensitive "Thermo-bulb" water temperature control. Heavy, electrically-welded tanks are galvanized inside and out, each equipped with a magnesium alloy anode to prevent corrosion.

## Uni-Heat Burner Line Consists of Four Models

FOUR MODELS of gun type oilburners, being produced by Ret-Rac Corp., Flushing, N. Y., comprise Uni-Heat line. Model C-20 has a rating of a minimum of .75 gph and a maximum of 2.25 gph; model C-45 ranges from 2 to 5 gph; model C-75, from 5 to 7.5 gph and model C-100, the largest model, has a capacity from 5 to 10 gph. All gallon

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per hour capacities are Commercial Standards ratings.

The burners feature a Uni-Heat combustion head, designed to provide micromatic adjustment of ignition point and a hollow cone flame.

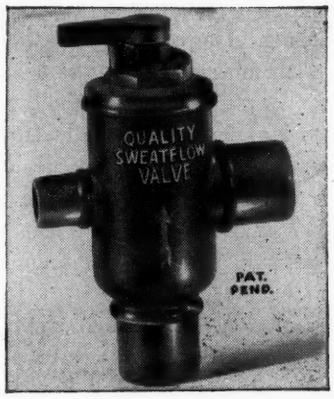
### Keeney Hot Water Air Valve With Flexible Extension

A HOT WATER AIR VALVE, offered by Keeney Mfg. Co., Newington 11, Conn., features a flexible extension in lengths of 15, 21 and 36 inches. The valve, recommended for use on convector radiators and concealed installations, incorporates on the extension a coin or screw-operated air valve.

The brass, nickel plated valve, employs a metal to metal seat and is equipped with fittings for 1/8" IPS pipe.

### Quality Sweatflow Valve Eliminate Sweat-Adapters

INTENDED for direct sweat connections with copper tube installations in hot water circulating systems, Sweatflow control valves, announced by Quality Specialty Co., Inc., Philadelphia 6, Pa., eliminate the use of sweat-adapters. Made of bronze, the valve also can be

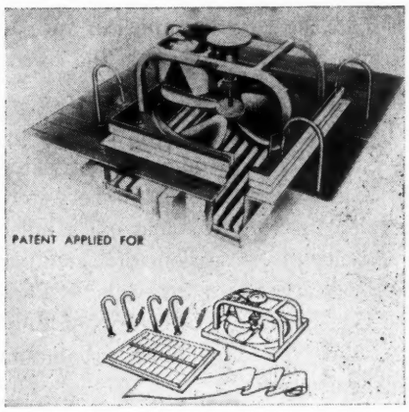



used for two-directional flow on some installations by using a 1/2" (compression tank) outlet for the main.

Valves are available for pipe sizes of 1", 1 1/4", 1 1/2" and 2", and can be operated manually or automatically.

### Chelsea Type EV Vertical Attic Fan

A SPRING MOUNTED, vertical air discharge attic ventilating fan, has been de-




signed by Chelsea Fan & Blower Co., Inc., Irvington 11, N. J., for locations with low headroom. The packaged unit consists of fan and motor, automatic ceiling shutter, floor mounting brackets and springs, canvas boot for seal between fan and floor, pull chain switch with fuse link.

Available in three sizes, the 30" model delivers 6,000 cfm; 36" size, 8500 cfm; and the 42", 12,000 cfm.

### Model No. 500 Hi-Power Portable 1/2 Inch Drill

PORTABLE ELECTRIC TOOLS, INC., Chicago 20, Ill., has introduced a new 1/2" portable electric drill, with capacity in steel of 1/2", in hardwood up to 1". Net weight of model No. 500 is 9 lbs., featuring housing and handles of aluminum alloy, universal AC-DC motor, cooling fan and Cutler-Hammer trigger switch.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## Reader's Problems

*Q. I am a reader of your fine magazine and enjoy very much, in fact look forward to, your "Readers' Problems" and "Everyday Snags." I would like it very much if these departments were published longer and regularly, for I notice a few of my magazines didn't have them.*

*We have a range burner customer with a problem and we don't know what to do. In the morning and at night they have to use a different number on their kitchen stove. The flame burns too high then too low. We have the oil level two inches higher than the oil reservoir is. We made this higher due to the fact the oil was not going fast enough. What could cause the kerosene burner acting so strangely?*

*M.J.F., Schenectady, N. Y.*

A. Thank you for your appreciative comments on your two favorite departments. Probably we cannot publish these two departments every month and in greater length as you request, but we direct your attention to a technical department new during the past year, which you may enjoy equally. This is our new department labelled "Short Short Article on Burner Service."

Pocketing of oil vapor or air in a high point of the oil feed line is one cause of variations in the flame size of a range burner. The fact that you obtained a large enough fire by raising the level of the oil at the input end of the line tends to confirm the idea that vapor-lock or air-lock is causing the trouble. To end the complaints, eliminate from the oil feed line any high spot which you can find in a detailed check-up on the slope of the line. Select any point in the line and make it the low point of the line. Make certain that from this low point the line goes uphill steadily in both di-

your most dependable source

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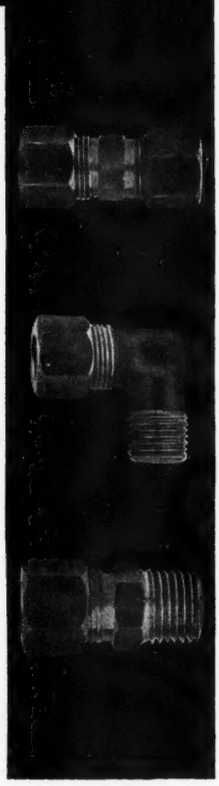

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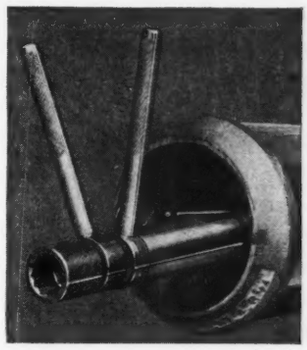

*The Ideal* **NOZZLE EXTRACTOR**

***Makes the Nozzle Easy to Replace and Remove***

This special quality tool is based on a patented principle which avoids possibility of damage—breaking porcelain and bending electrodes—which commonly happens when ordinary wrenches are used. The Ideal NOZZLE EXTRACTOR makes possible the removal and replacement of the nozzle without removing the burner assembly, by reaching in through the fire door. Saves time—can be done in 40 seconds. Three 12-point socket wrenches in one compact tool; socket on reverse end can hold regular screw-type nozzle tip firmly while taking it apart or assembling.

WRITE FOR COMPLETE INFORMATION

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*fueloil & oil heat*

rections. A positive, dependable flow of oil sometimes is gained by running a line straight down, vertically, for two or three inches where the line connects to the oil feed device at the input end of the line, then having the line bend suddenly and go uphill at a considerable slant to the burner. Any air or oil vapor released in the line then rises vertically (in a direction opposite to the direction of oil flow) and goes back to the oil feed device and escapes, or flows rapidly towards the burner, escaping there from the line. The big idea is to avoid up-and-down curves in an oil feed line, and high spots in which oil vapor or air will be trapped.

If forcing oil through a line eliminates the trouble for a few hours but then the trouble returns, probably vapor-lock or air-lock is causing the trouble. Lines in hot locations have a greater tendency to give this trouble than lines which are cool at all times.

* * *

*Q. Being a subscriber for a number of years and an ardent follower of your Readers' Problems, which have helped me considerably in the past, I thought perhaps you could help me solve a problem.*

*A number of my accounts have asked me to connect an extra 550 or 1000 gallon buried tank to their existing buried tank, also to connect an outside buried tank to the existing inside 275 gallon tank.*

*The territory I cover is not governed by any local codes for tank installations. I would appreciate it greatly if you could tell me if there is a practical and safe way to make these installations.*

*M.E., Lindenhurst, N. Y.*

A. If you have in mind a simple, relatively inexpensive answer to the two-tank problem, which is fully automatic as far as the burner owner is concerned and which is as simple to deliver oil to as a one-tank installation, we are sorry but we have to give no as the answer.

Of course, you can use a wall pump to feed oil from an outside tank to a 275 gallon tank in the basement. But that is not an inexpensive way to solve the problem, and with almost any arrangement there are complications when oil is delivered and when one of the tanks goes dry. Also, although two outside tanks should not be connected together at the bottoms of the tank, you may be successful, as certain dealers have been, in using an arrangement in which a single suction line runs out to a tee which connects to lines to both tanks and in using a similar piping scheme for the return lines. Each tank would have its own vent line and fill line. Even when two outside tanks are connected to the same burner with a great deal of care, however, the chances of trouble are too great for general use of the idea.

It's not good for the burner owner to have to turn valves in suction and return lines to switch from one tank to another.

We publish this in the hopes that some of our experienced readers, who have developed low-cost, 100% foolproof ideas for using two buried tanks or an inside tank connected to an outside tank, will send us sketches of arrangements which do the job.

* * *

*Q. I am not satisfied with the results of my efforts to keep the circulating blowers of warm air heating plants running steadily on cold days. When I set down the bonnet controls, even as low*

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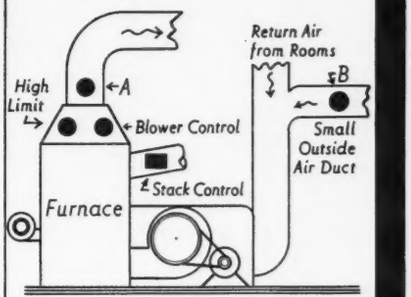
*as 100°, either the warm air registers give out cool air which causes complaints, or the blowers keep shutting off even in coldest weather. Can I use an outside temperature control to keep the blower going continuously whenever the outside temperature is cooler than the setting I select? What control arrangement must I use to make certain the warm air registers never blow cold air? To top it off, naturally I've got to avoid overheating the house, and the arrangement must be suitable for the plain forced-circulation systems being installed in ordinary homes, not millionnaires' mansions.*

*E.S.D., Boston.*

A. Excessive circulation of air may have caused your difficulties. Try reducing the speed of the blowers about one-third or one-half by switching to smaller pulleys on the motor shafts, and closing down on the dampers in the ducts to the supply registers or using pieces of sheetmetal to reduce the areas by the warm air registers by one-third or one-half. Also, if you want to make especially intensive efforts on an installation or

*Diag. 1 - Winter Air Conditioner Problem*




*Controls A and B are added to make blower run continuously on cold days.*

two by installing two additional controls, use the ideas covered by accompanying diagrams 1 and 2.

Control A, in these diagrams, is an additional direct-acting furnace temperature control which will start and stop the burner in cold weather, keeping the furnace so warm that the circulating blower runs continuously. Set the regular blower control as low as possible for the particular installation (say 110°) without causing complaints about cool air coming from the warm air registers. Then set control A about 10° higher (say 120°) so that when this control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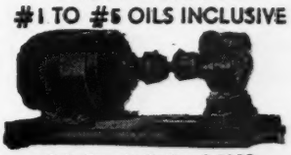
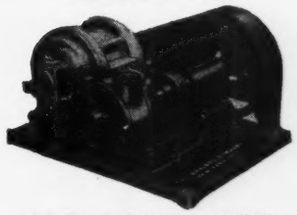


Ask For Bulletin A-1330

CLASS 60 HEAVY OIL PUMPS
REDUCTION DRIVE
FOR HEAVY OIL



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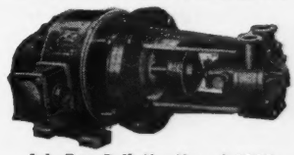

Ask For Bulletin No. A-1267

CLASS 80 TRI-ROL PUMPS
INTERCHANGEABLE SERVICE
BOTH LIGHT AND HEAVY OILS
TANK TRUCK AND BULK STATION

Ask For Bulletin No. A-1366

295 WILLIAMS AVE.

THE KRAISSL COMPANY
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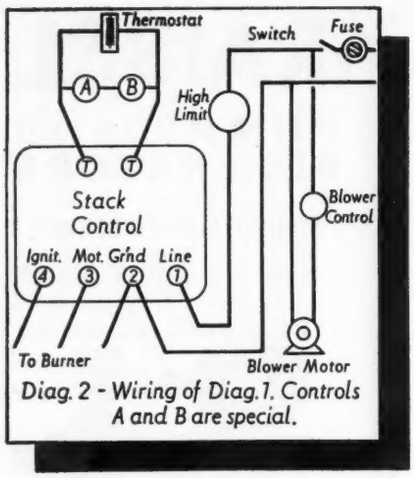

Diag. 2 - Wiring of Diag. 1. Controls A and B are special.

starts and stops the burner the circulating blower will run continuously.

Control B cuts out control A in warm weather, being in series with it as Diag. 2 indicates. If the installation has a duct which gives a small amount of outside air to the circulating blower, control B can be an ordinary room thermostat located in this outside air duct. Otherwise, control B must be some type of thermostat or limit control which is affected by the temperature of the outside air, and which can be set at about 30° to 50°.

If overheating results from setting control A at 120° and control B at 40°, you will have to set control B lower or reduce the amount of air handled by the circulating blower. You may be satisfied with the results obtained by setting control B at 30°, since that will insure continuous operation of the blower whenever the outside temperature is cooler than 30°.

Naturally, an ordinary room thermostat has to be specially calibrated so that it can be set between 30° and 50°, but altering it so that it can work in this range is not difficult for a dyed-in-the-wool control enthusiast.

* * *

*Q. Please discuss the following question regarding a baffle on three legs over a round combustion chamber in a cast-iron hot air furnace: Does the baffle destroy the radiant heat of the flame?*

*H.B.R., Madison, Wis.*

A. On certain installations such a baffle does block the flow of radiant heat to the direct heating surfaces of the furnace which are in the "shadow" of the baffle.

Consider these factors:

a. In certain oversize, lightly-fired furnaces, the flames lose too much radiant heat to the direct heating surfaces. Cleaner combustion and higher flame temperatures will be gained through reducing the loss of radiant heat by installing the proper shield to match the characteristics of the particular furnace or boiler. An over-fire baffle in a round cast-iron furnace will save fuel on many installations in the same way that, for example, a refractory or metal downdraft baffle saves fuel in an oversize boiler. Records prove that in certain long, narrow boilers the downdraft baffles save considerable fuel, and over-fire baffles which are engineered as carefully probably would cut the fuel bills as much on these installations.

b. Higher flame temperatures result from installing over-fire baffles in round cast-iron boilers. Higher $CO_2$ readings, indicative of reduced stack losses, definitely are gained in many studied instances. Cleaner, quieter combustion often is gained incidentaly.

c. Properly installed, an over-fire baffle gives highly beneficial scrubbing action to the hot gases leaving the firebox. Extremely hot gases wipe hard against the direct heating surfaces of the furnace, increasing the transmission rate of these most important surfaces. Not only is the scrubbing action gained, but the gases leaving the firebox are much hotter than they would be without help from the baffle.

d. The baffle gives more lively flow of gases. Instead of flowing in a thick, lazy stream, the gases speed along in a thin, lively stream. In leaving the firebox, they squeeze through a high temperature zone around the edges of the baffle. Along with other benefits, increased catalytic action is gained, and this makes for cleaner, more efficient combustion.

To make sense, you have to use combustion testing instruments and compare the before-and-after readings you obtain through installing the baffles. The baffles should give you higher efficiencies as the result of lower stack temperature readings and higher $CO_2$ readings. The value of installing baffles properly is shown also, of course, by a reduction of the oil consumption of studied installations.

* * *

*Q. Please advise us how the movement of the air device backward and forward*

Machine Made — They FIT!
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# POSITIVE DRAFT

## Regardless of weather or size of chimney

Waste of valuable heat units caused by incomplete combustion often results from inadequate draft. Wing Draft Inducers maintain an even, constant suction to furnish the correct air volume for complete combustion.

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154 W. 14th St., Dept. FO,
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Factories: Newark, N. J., Montreal, Canada

**CAUSES OF POOR DRAFT**

1. Chimney too low to create the required "pull" in the furnace.
2. Chimney diameter too small, creating restriction in gas flow.
3. Complicated breeching — too long, with too many elbows or restricted areas.
4. High surrounding structures "blanketing" chimney's draw causing "down drafts."
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## MAKE MORE MONEY

**Seven to one, customers are more interested in results than initial cost. You can show combustion efficiency with these exclusive Rexoil achievements.**

- **PATENTED HIGH HEAT COMBUSTION HEAD**
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**IT'S FAST**— Handles twice as many jobs as the ordinary furnace cleaner.

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**IT'S COMPLETE** — A packaged unit with practical cleaning attachments designed for fast, easy cleaning.

**IT'S PROFITABLE**—The trouble-free operation and speedy service of the Grand Rapids Furnace Cleaner puts extra profits in your pockets.

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Granite & West Sts., Midland Park, N. J.
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FEDERAL BOILER CO. INC. FBC
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MIDLAND PARK, N. J.

*Representatives in Principal Cities*

*in the blast tube effects the flame. Will moving it forward make the flame more bushy etc.? Should different settings be used for different firing rates? Is there a rule of thumb that covers setting this regulator?*

*I.P.S., Herkimer, N. Y.*

A. We know of no thumb rule that covers the adjustment of the air-handling parts of gun-type burners.

The proper adjustment of such parts is greatly different for parts of different designs and makes. In certain burners, moving the air-handling parts closer to the flames gives wider flames, but in other burners the same movement gives an opposite effect. To obtain the proper amount of air, the air-handling parts must be moved in the gun tubes of some burners. In other burners, these parts are moved mainly to obtain the clean, bright burning that comes of proper air velocity where the air from the gun tube first comes in contact with the oil spray from the nozzle. We suggest:

1. Using combustion testing instruments, study the effects of moving the air-handling parts of burner which interests you. Do this on several actual installations. Find out which settings of the air-handling parts give you cleanest, brightest burning together with highest efficiencies and quietest combustion. Find out if the shape of the flame can be changed by using nozzles of the same or different spray angles together with different positions for the air-handling parts.

2. Write to the manufacturer of the oilburner for complete instructions on adjusting the air-handling parts.

* * *

*Q. S'help us, here we are new in the burner business for the last two years, have been fighting hard to get stack temperatures as low as 600° and $CO_2$ up at maybe 8%, where we understood these things should be, and now you come along on page 189 of your March issue and talk about 400° stack temperature and 13% $CO_2$! Are you trying to kid somebody, or do these things ever happen outside of sales claims?*

*S.K., Brooklyn, N. Y.*

A. Mere mention of these excellent readings should not alarm you that much, especially since the article indicated that stack temperatures come as low as 400° to 500° and $CO_2$ readings come as high as 12% to 13%. Rarely are such good readings obtained, still more rarely do the best in $CO_2$ and stack temperature readings come from the same installation. If the stack temperature is very low, for example, the $CO_2$ might be 8%. If you really are determined about getting 400° to 500° stack temperature readings where you sell the furnaces and boilers, you can succeed in this by buying large-enough furnaces and boilers of the best designs. Take up the problem with some of the leading furnace and boiler manufacturers, and this should lead you to some actual installations which show such low stack temperatures. Similarly, with help from the manufacturers of the best burners you should be able to learn how to produce 12% to 13% $CO_2$ on an installation or two, though it's problematical whether or not you'll want to leave the installations adjusted for such high $CO_2$ once you have proved to yourself that you actually can arrive at it. After all, when tuned to be on the verge of incomplete combustion, a burner is more likely to give trouble.

IT'S NEW! IT'S COMPLETE!

DWYER TRANSPARENT COMBUSTION TEST SET

Correctly Helps You . . .

- Determine proper $CO_2$ content
- Check for air leaks
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The new DWYER Combustion Test Set helps you lick the continuing fuel shortage. Every instrument necessary to do the job included . . . $CO_2$ Indicator, Visi-Draft Gage & Level, and Stack Thermometer. Furnished with durable carrying case, all accessories and instructions .....$33.50

Bulletin 220 describes this set as well as other styles and components. Write for it!

F. W. Dwyer Mfg. Co.

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# MORE OIL BURNER ACCESSORIES *by Buckeye*

**Those two words,** "By Buckeye," are a familiar guarantee of thoughtful engineering and good construction; the performance and long life your dollars should buy. Pictured here are a few of the many items that make up the Buckeye complete line of Oil Burner Accessories.

**No. 623 Flush Fill Box**
Sturdy but light, cast iron body, brass lid. Made in 2" size for fuel oil installations.

**No. 440 Vented Fill Cap**
Heavy cast iron. Extension arm on body quickly locates cap for padlocking. Removable vented cap.

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Heavy iron. Used when fill pipe extends above surface. Hinged cap can be locked.

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All brass with malleable iron handle. Easy to operate at any angle without a foot valve. Expels about 1 pint per stroke.

**No. 631 Double-Opening T Vent**
Each opening has brass fire screen protected by a heavy galvanized hardware cloth.

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# Manufacturers Activities

## Silent Glow Closes For Vacation; Announces Winners

THE OFFICE and factories of Silent Glow Oil Burner Corp., Hartford 6, Conn., closed from July 3 to July 18, inclusive, for the company's annual two-week vacation period.

The May issue of "The Glow," monthly house organ published by Silent Glow, announced the winners in the recently concluded "Show-Tell-Sell" sales and display contest. The contest was a national campaign aimed at replacing obsolete oilburners with "Air-Seel" gun type burners. Cash prizes of $500.00 each were awarded to the following dealers for the greatest increase in replacement installations in their brackets: Metropolitan Ice Co., Somerville, Mass.; Fred Smith, Budd Lake, N. J.; Thomas Hoff, Bloomingdale, N. J. and Thomas Symonds, Montpelier, Vt. In addition, Metropolitan Ice received the $1,000 bonus for having the best record among the top four group winners.

Prize awards were given W. C. Davis, Haddon Heights, N. J. and Kutten Bros., Wilmette, Ill., for their window displays. Special prizes for attractive displays were received by Charles Schell, Willimantic, Conn. and George Chenowith, Oil Burner Engineering Corp., Baltimore.

Tangible reasons why the General Automatic family is growing so fast!
CM-85 Furnace
OLD WASTEFUL FLAME
NEW P-C FLAME
Pat. Applied For

**PROTECTED DEALERSHIPS**
**are still open in good oil burner markets.**

The General Automatic CM-85 Winter Air Conditioning Oil Furnace combines modern automatic oil heating and winter air conditioning in one complete compact unit specially designed for basementless homes. Fired by the new P-C Burner which saves up to 1/3 fuel by providing precision combustion. Easy to install, Easy to service.

GENERAL Automatic EST. 1924

GENERAL OIL BURNER CORPORATION, 2300 Sinclair Lane, Balto. 13, Md.


## Jones & Brown Opens New Pittsburgh Headquarters

OPENING of new Pittsburgh, Pa., headquarters on May 14 was celebrated by Jones & Brown, Inc., national distributors of Ko-Z-Aire winter air conditioning units. Guests included members of the press and radio, city, county and state officials and prominent local figures. Ko-Z-Aire units are made by Ko-Z-Aire, Inc., Red Oak, Ia., designed for automatically-fired home and commercial installations. Jones & Brown also have national distributorship of Inselbric, insulating brick siding.

The newly remodeled, modern building houses the company's executive, sales, advertising and accounting offices. Eastern and western sales offices are maintained in New York and Chicago and thirty regional sales offices are located in other major cities throughout the country.

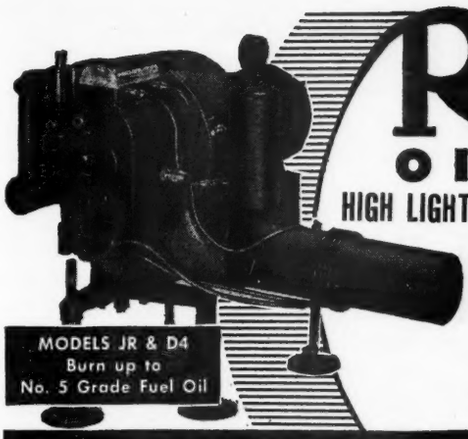
## Monogram Products Names Philadelphia Distributor

CONFIRMATION has been released by Monogram Products Co., Philadelphia 4, Pa., of the appointment of Tomkins Brothers, Rising Sun and Venango Sts., as distributor of Lite-Cast refractory products in the Philadelphia area.

The Tomkins organization, with a staff of competent refractory salesmen, large warehousing facilities and a complete refractory stock are well set-up to service customers in and around Philadelphia and southern New Jersey. Lite-Cast cites this step as another in its program to provide improved service and help to jobbers.

## Airtemp Announces Personnel Reassignments

SEVERAL reassignments of home office and field personnel have been announced



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Cash in on conversion and replacement jobs now by installing Rayfield burners for No. 5 oil and make profits for yourself and savings for your customers.

Model JR for 2,000 to 8,000 Gals. yearly
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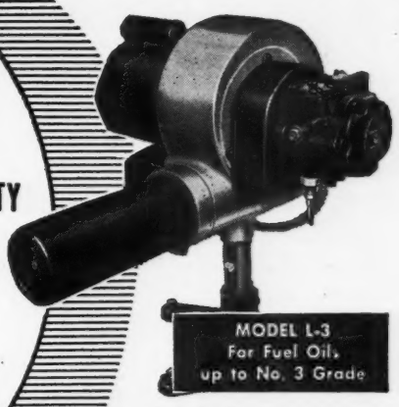
Investigate comparative oil prices in your locality now and figure it out for yourself—it will amaze you.



MODELS JR & D4
Burn up to
No. 5 Grade Fuel Oil

MODEL L-3
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up to No. 3 Grade

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by C. S. Stackpole, vice president and general sales manager, Airtemp Div., Chrysler Corp., Dayton 1, Ohio. J. F. Knoff and Sydney Anderson, Jr., have been appointed sales directors on Mr. Stackpole's staff. Mr. Knoff had been acting southern divisional manager and Mr. Anderson was formerly eastern divisional manager.

Other changes saw G. S. Cobb, former southern divisional manager and staff assistant to Mr. Stackpole, assigned as regional manager at Dallas, Texas and E. A. Ham, formerly northern divisional manager, assume the duties of regional manager of the Chicago region. In National Account Sales, M. T. Bard was named director and J. E. Hoyt was named staff assistant, with headquarters in New York City.

### Columbia Boiler Names Metropolitan New York Outlet

MORRIS & GAIR, New York 10, N. Y., have been named sole distributors in the Metropolitan New York area for the steel boiler units offered by Columbia Boiler Co., Pottstown, Pa. Dan Morris is sales manager for the distributor, which will service outlets in the five boroughs of New York City, Westchester, Putnam, Rockland, Fairfield, Nassau and Suffolk counties in New York and northern New Jersey. A warehousing and delivery service has been established to cover the entire area.

### Thrush Engineering Booklet Offers Installation Data

FORM FCE 648, an engineering booklet, prepared by H. A. Thrush & Co., Peru, Ind., is devoted to information on forced


# Modern Heating Plants conserve fuel save money

THERE'S BIG BUSINESS in replacing old oil burners with modern efficient heating units.

This year, sell conservation and efficiency.

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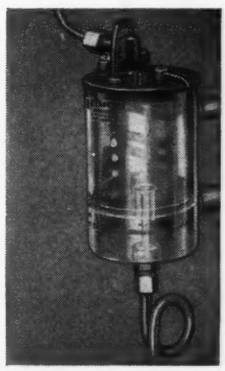
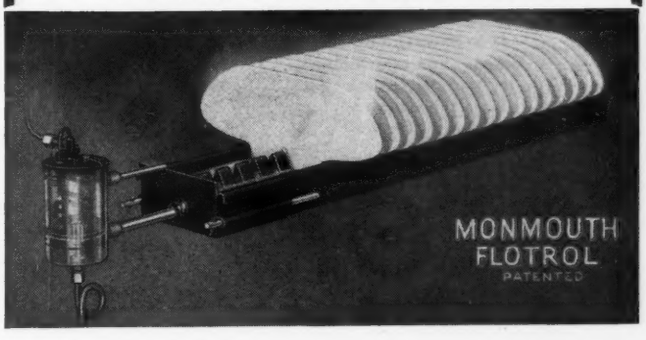
# MONMOUTH HUMIDIFIERS



• For healthful heating, use a good humidifier on every heating installation you make. For long dependable performance, and freedom from repairs and adjustments, make it a Monmouth FLOTROL, or a MICRO-FEED, the best engineered and built humidifiers available. Get that easy EXTRA profit in every Monmouth sale. We also make gas operated HUMIDITY CONDITIONERS for all radiator jobs.

*Bulletin and prices on request.*

**THE CLEVELAND HUMIDIFIER CO.**
7808 Wade Park Ave., Cleveland 3, Ohio

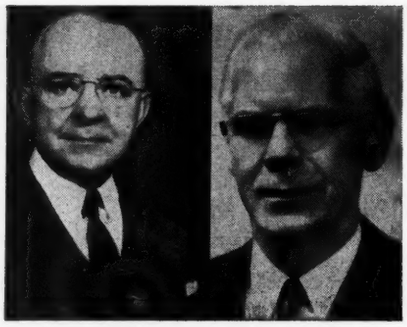


circulating Thrush Flow Control System of hot water heat. It contains engineering and installation data, wiring diagrams and details on radiant heating as well as conventional type hot water heating systems. For each typical installation drawings are included to show the general appearance of various types of systems, illustrating the application of Thrush equipment.

Some of the engineering data incorporated in the booklet include a method of figuring radiation requirements by the Btu method, tables of basic heat loss coefficients, minimum capacity tables for water heaters and storage tanks, simplified radiant heating data and wiring diagrams for radiant panel and Thrush Flow Control systems. Ratings, dimensional data and capacities are listed for all components of the Thrush system.

### Bills Becomes President Of Gilbert & Barker

PHILIP H. BILLS has been elected president of Gilbert & Barker Mfg. Co., West Springfield, Mass., succeeding S. C. Hope, who resigned to become executive vice president, Esso Standard Oil Co. Mr. Hope succeeds A. Clarke Bedford, retiring. Mr. Bills has been with Gilbarco since 1912 and for the past two years was executive vice president.



P. H. Bills T. C. O'Donnell

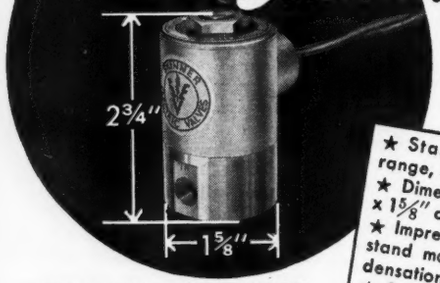
At the same time the election of T. C. O'Donnell, works manager since 1926 and vice president since 1940, to the position of executive vice president was anounced. E. A. Sundberg, formerly secretary and assistant treasurer, now is treasurer; W. S. Hendry has advanced from comptroller to become assistant treasurer and secretary; H. O. Grimmeisen, formerly chief engineer and assistant works manager, has been promoted to works manager.

### York-Heat Distributor Committees Meet Twice

TWO RECENT MEETINGS of representatives of York-Heat distributor committees have been announced by York-Shipley, Inc., York, Pa. At a May 10 meeting at the factory the Distributors Merchandising Committee, Industrial Division, heard a new program outlined for merchandising the firm's oilfired industrial equipment, including Steam-Pak generators and rotary burners. Present at the meeting were Frank Sinning, Cleveland; Joe Collins, Buffalo; B. P. Bullman, Boston; Frank Elliott, Philadelphia; Gene Trabilcy, Union City; August Corsini, New York City and Sam Naiman, Elizabeth. The fueloil situation also was a subject of discussion and it was decided to adopt Oil-Heat Institute's program of cooperation with the oil industry.

Engineers for the company discussed problems of heating equipment design with a committee representing distributors at a second meeting on May 21. This was the second meeting of the committee and is part of York-Heat's policy to check the operation of present equip-


STAINLESS STEEL *Solenoid Valves* ★




★ Standard pressure range, 5 to 250 psi
★ Dimensions 2¾" high x 1⅝" dia.
★ Impregnated coils withstand moisture and condensation
★ Soft insert seats prevent leakage
★ Spring loaded for positive action
★ Stainless steel parts highly resistant to corrosion and wear
★ Power consumption 10 watts max.
★ Pipe connections to specification
★ Also many special valves for handling pressures from 5 to 850 psi

THREE WAY - TWO POSITION
TWO WAY - NORMALLY CLOSED
TWO WAY - NORMALLY OPEN

Skinner Stainless Steel Solenoid Valves are rugged, accurate, compact and long lived. They are worthy additions to any product you may have which requires control or metering of fluid and gaseous media. Skinner will be pleased to make recommendations on your particular design applications — they have for hundreds of others. Write today for details and catalog.

*Skinner* ELECTRIC VALVE DIV.
formerly Allied Control Valve Division
THE SKINNER CHUCK COMPANY
137 Belden Ave., Norwalk, Conn.

SKINNER ELECTRIC VALVES



FUEL SAVERS!

*Indispensable* to Help You Cooperate with the Industry's Drive to Save Fuel!

A leading authority states—"Even after a home heating plant has been adjusted as perfectly as possible by competent, experienced men without instruments, it is usually possible to improve its efficiency 10 to 15% by using FYRITE combustion-testing instruments."

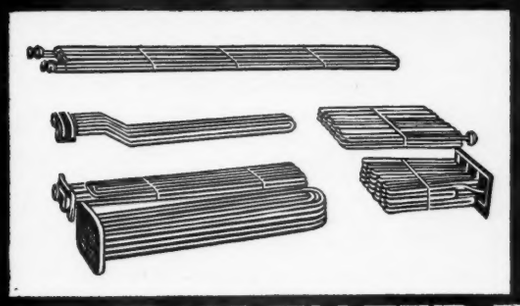
The FYRITE Service Kit illustrated has everything you need to quickly and accurately point out adjustments that assure both fuel economy and heating comfort. Furthermore, its use helps you streamline and dramatize your sales work—showing by indisputable instrument-test evidence the need for replacement of an obsolete installation by more modern and efficient equipment.

For further details ask your jobber or write for free Bulletin 730.

BACHARACH Industrial Instrument Company
7000 Bennett Street • Pittsburgh 8, Pa.

MEMBER OHI OIL-HEAT INSTITUTE OF AMERICA

# Kam Tankless Coils



KAM

**For all Steel and Cast Iron Boilers, Any Style... Any Make...**

No matter what your tankless coil requirements may be, KAM is prepared to serve you on short notice. KAM gives you and your customers the advantage of 42 years' experience in the design and fabrication of water heating equipment. Modern facilities . . . modern plant . . . KAM is fully abreast of present day plant and engineering practice. Contact KAM today . . . give name and number of boiler; the correct coil will be shipped promptly.

**KAM WATER HEATER MFG. CO., INC.**

239-249 ALABAMA AVENUE BROOKLYN 7, N. Y.


ment and design of new equipment with engineers from its sales representatives before equipment is placed on the market. W. G. Lathrop, Hartford, chairman; Joe Collins and Lester Eschner, Buffalo; B. W. Johnson, Norfolk and Earl Daniels, Binghamton, N. Y., were in attendance.

### Belgian Distributor Sells 1800th Oil-O-Matic

A HIGHLIGHT of the 22d International Fair in Brussels, Belgium, was the sale of the 1800th Oil-O-Matic burner to be installed in Belgium and Luxembourg. The sales contract was signed in the booth maintained at the Fair by SOCMA, Belgian distributor for the Williams Oil-O-Matic Div., Eureka Williams Corp., Bloomington, Ill. SOCMA has become famed for its hard-hitting, aggressive merchandising tactics.

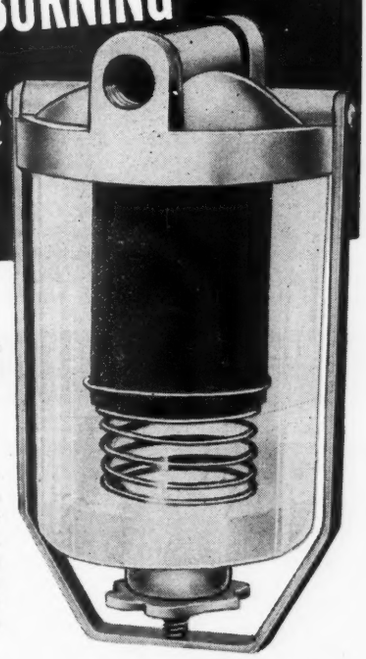
### Peirce-Phelps Adds Percoflash Boilers to Line

DISTRIBUTION of Percoflash steel boilers, made by Westcott-Alexander, Inc., Madison, N. J., is being handled in eastern Pennsylvania by Peirce-Phelps, with offices in Philadelphia 23, and Harrisburg, Pa. A trade announcement has been circulated in the area by Peirce-Phelps, a large well-known distributor of heating and accessory equipment.

### W. L. Mellon Retires As Gulf Oil Charman

AFTER HAVING SERVED as the active head of the Gulf Oil Corp. for forty-five years, W. L. Mellon retired on May 26 from his position as Chairman of the Board, but will continue to serve as a


# KEEP 'EM BURNING with Klemm FUEL OIL FILTERS



WITH THE FAMOUS

**CHEMISTONE UNIT**

***The original controlled porosity element.***

Klemm Fuel Oil Filters insure a steady flow of oil to burners. Every oil heater needs this protective device. You profit by recommending it—a good margin on each sale, increased customer good-will and fewer calls for emergency repairs.

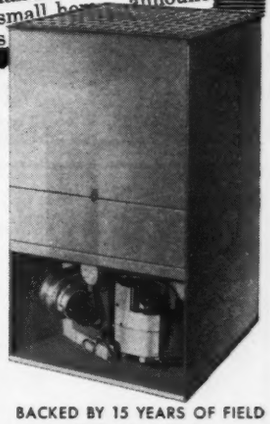
**Liberal discounts to dealers.**
Export Division: Guiterman Co., Inc.
35 William St., New York 4, New York

**Klemm**
AUTOMOTIVE PRODUCTS COMPANY
1718 N. DAMEN AVE. CHICAGO 47, ILLINOIS

# DOMESTIC'S PACKAGE UNIT FURNACE SETS THE PACE!

**More Modern · More Profitable**
**Delivered "Ready to Go"**

Seattle, Wn.—The Domestic Manufacturing Company, pioneers in oil-fired heat for small ho... announces the latest in floor furnace des...



Domestic's "Package Unit" Floor Furnace has all controls and wiring permanently located! . . . . it's "READY-TO-GO" on delivery! Three simple connections: Oil line, smoke-stack and electricity. Competitively priced. Attractive discount basis.

*KEY SPECIFICATIONS: 50,000 BTU output; register metal-plated with statuary bronze; casing 24" x 24", 43" high. Forced draft. Listed with Underwriters Laboratories.*

BACKED BY 15 YEARS OF FIELD INSTALLATIONS
Write For More Complete Details.

**DOMESTIC MFG. COMPANY**
2922 WESTERN AVE. SEATTLE 1, WASHINGTON

director. To succeed him, J. F. Drake, president of Gulf since 1931 and a "Mellon-trained" man, has advanced to the position of Chairman of the Board. S. A. Swensrud, executive vice president since May 1947, succeeds Mr. Drake as president, and, in turn, is succeeded by J. E. Nelson, former vice president and treasurer, who has been with the Mellon Family for forty-five years.

Other changes announced following the May 26 meeting of the Gulf Board of Directors included H. A. Gidney, vice president and comptroller with twenty-eight years of Gulf service, also elected an executive vice president; H. R. Moorhead, Jr., former assistant treasurer, elected treasurer and W. L. Naylor, assistant comptroller, who was promoted to the position of comptroller.

### Pacific Marketing Induced Draft Fan

LATEST product to be added to the line of the Pacific Steel Boiler Div., United States Radiator Corp., Detroit, Mich., is the Pacific-Wing Induced Draft Fan. The unit is designed chiefly for large commercial boilers and is particularly suitable for single-story buildings since it permits the use of a low smokestack instead of the usual tall chimney.

### Debler Handling Iron-Hide; Concentrates in N. E. States

COMBUSTION CHAMBERS, refractory baffles and baffle suports, made by Iron-Hide Refractory Products, Matawan, N. J., now are being handled by William J. Debler & Sons. They are functioning as exclusive representatives in the New England states.

A concurrent announcement from William J. Debler, Sr., president, William J. Debler & Sons, explains that the company in the future will concentrate its sales activities in the six New England states and has established headquarters at 1284 Beacon St., Brookline 46, Mass. Fred G. Ball, Hicksville, N. Y.; Walter B. Stamberger, Jr., Rutherford, N. J. and Vincent E. Devine, Philadelphia 39, Pa., formerly associated with the Debler organization, have taken over as factory representatives for the same companies in their respective territories. The organization is handling Rochester oil tank gauges and test kits, Turnbull Effecto-Grilles for warm air heating, Skuttle furnace humidifiers and Edco nozzles, kits, adapters, strainers, pressure regulating valves, air cones and stabilizers, in addition to Iron-Hide refractory products.

### J-M Firebox Conversions Urged in Radio Advertising

JOHNS-MANVILLE, New York 16, N. Y., sponsors of regular newscasts over the CBS network, is using some of its radio commercials to explain to the public the advantages of J-M insulating fire brick and to urge modernization and conversion of existing firebox during the summer months. A typical radio message, broadcast June 4, led off with the advice to the homeowner to call his local oilburner dealer for a complete burner check-up. Emphasizing that the burner is not needed for heating now, the message cited the summer months as "a good time to install a new firebox of Johns-Manville Insulating Fire Brick. This material can cut your fuel bills up to 10%. . . . You get quieter burner operation, less oil odor and faster heating.

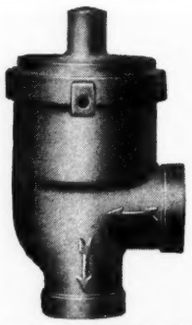

15.1% $CO_2$ recorded by a nationally recognized engineering laboratory, using a standard "UNI-HEAT" CONVERSION BURNER

Our own precision head design eliminates "Cat" oil worries

Exclusive territory Write for details

RET-RAC CORPORATIO
36-01 Lawrence St.
Flushing, N. Y.

FOUR SIZES, ¾ to 10 gph.



PREFERRED Anti-Syphon Valves
APPROVED BY UNDERWRITERS' LABORATORIES, INC.

For Oils Up To No. 5—Valves C5 and C10 are available in ⅜" and ½" sizes.
For Oils Up To and Including No. 5—Valves B5 and B10 are available in ¾" and 1" sizes. (1" size is built up from ¾" size with fittings.)

Permits pumping of oil but closes to prevent syphoning in case of suction line break.

PR-173

PREFERRED UTILITIES MFG. CORP.
1860 BROADWAY, NEW YORK 23, N. Y.

HAYWARD OIL BURNERS

Many Attractive Territories still open for Exclusive Distribution

HAYWARD MFG. CO., INC.
505 COURT STREET BROOKLYN 31, N. Y.

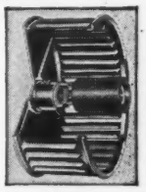
To our readers:

Do you keep a file of FUELOIL & OIL HEAT?

74% of our readers seem to—some have files going back to 1933.

Verified by FACT FINDERS

ONLY THE HOMEASE OIL BURNER
HAS THESE TWO EXCLUSIVE FEATURES:
1. "FLAME-IZER" Complete Flame Shape Control
2. "FIRE-STAT" Complete Combustion Control
HOMEASE
THE KEY TO BETTER LIVING
HOMEASE PRODUCTS COMPANY
PATERSON 3, NEW JERSEY

Your Source of Supply for L-R FLEXIBLE COUPLINGS
USE FANS WITH L-R JAWS AND SAVE MONEY
There is no substitute for L-R Flexible Couplings in the Oil Heating Industry—whether used for pumps, fans, blowers or transmission of power from motor to equipment. They are the dependable, fool-proof standard of the trade.

LOVEJOY FLEXIBLE COUPLING COMPANY
5012 W. LAKE STREET, CHICAGO 44, ILLINOIS

Ask your dealer how Johns-Manville Insulating Fire Brick can save up to 10% on your fuel bills."

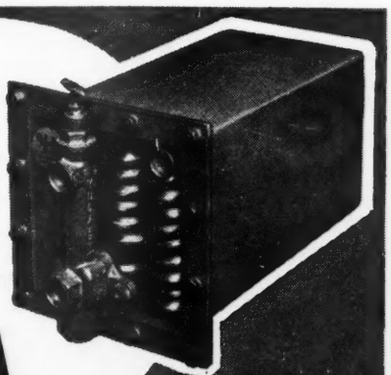
The fire brick also is featured in a series of advertisements being placed by the company. These tell how the brick increases burner efficiency by reaching white heat quickly and preventing heat loss through the brick because of its low thermal conductivity.

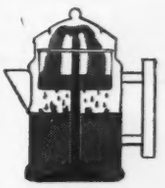
## Honeywell Promotes Five; Opens New Haven Branch

A NUMBER of personnel changes, made necessary because of expanding sales and service activities in various sections of the country, according to Thomas McDonald, vice president, have been announced by Minneapolis-Honeywell Regulator Co., Minneapolis 8, Minn. Kent L. Wilson, former Detroit branch manager, has been promoted to manager of the southwest region, with headquarters in Dallas. His region covers all of Texas and surrounding areas and includes branches in Dallas, Houston, New Orleans and Wichita. Succeeding him in Detroit is T. S. Carley, who has been manager of the stoker and wholesale divisions at the home office.

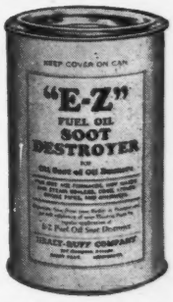
Walter J. Baak, who has been Moduflow sales manager, midwestern region, has been promoted to sales manager of the wholesale division. William S. Robards has been appointed Milwaukee branch manager. He has been in the Milwaukee office since 1944 in charge of industrial sales and succeeds L. C. Johnson, who died in May.

G. M. Kingsland, who has been heading sales activities of the company's control devices and specialties depart-

Yula
C.H.M. Residential Shell Tankless Heaters
(Can be used with steam or hot water heat)
C.H.M. In-Boiler Tankless Heaters
(For Residences, Apt. Houses, Industrial Buildings.) Can also be furnished as in-boiler heaters.
Write to Dept. F-7

Yula
WATER HEATERS, INC.
166 WEST 225 ST. • NEW YORK 63
WRITE FOR CATALOG

PERCOFLASH
the flash-action BOILER
The amazing operating efficiency of the PERCOFLASH Boiler is found in its unique percolating principle of design. Water is flashed into steam in all heads with exceptional rapidity and efficiency. Geyser tubes raise water to steam heads eliminating the necessity of raising all water in boiler to steaming temperature. This means faster and more economical generation of steam. It's a fuel saver whether coal, gas or oil.
When you think of Percolating action, think of PERCOFLASH!

PERCO PATENTED FLASH
DISTRIBUTORS—DEALERS . . .
Write for Franchise Plan!
Westcott-Alexander, Inc.
MADISON, NEW JERSEY
PERCOFLASH
Incorporated
120 S. LaSalle, Chicago

You Save When You Buy from Webber!
EVERYTHING
For the Oil Burner Heating Trade
A. R. WEBBER CO., INC.
DEPT. 61
NEW HAVEN 11, CONN.
FREE! Monthly Bulletins of Specials. Send Your Name and Address Now.
EVERYTHING FOR THE OIL BURNER TRADE

E-Z SUMMER CLEAN UPS
E-Z Fuel Oil Soot Destroyer will clean many thousands of oil-fired furnaces this Summer. Its speed (one application does the job), its thoroughness in eliminating all soot, its safety and low cost per job, make E-Z a big profit item. (Good for fuel oil soot only.) Keep a 5 lb. Can in each service truck, always. Stock the 1 lb. Can for direct sale to customers. If your Distributor cannot supply you, order direct.
No. 1 Pkg. approx. 1 lb. . . . List $1.00 ea.
No. 5 Pkg. approx. 5 lbs. . . List $4.50 ea.
Special discount to Distributors on quantity purchases, allows for extending regular discount to Dealers and Servicemen.


HEALY-RUFF COMPANY
797 Hampden Avenue • St. Paul 4, Minnesota

ments, is taking over new duties in the heating controls division, supervising sales activities of stoker controls.

A new branch opened by the company in New Haven, Conn., located at 265 Church St., will handle air conditioning sales and service only. L. W. Shepard, who has transferred from the Hartford branch office, will manage the new operation.

### York-Shipley Distributing Packaged Cooling Units

DISTRIBUTION of three sizes of packaged cooling units, under the trade name of Shipley Air Conditioners, has been started by York-Shipley, Inc., York, Pa., manufacturers of York-Heat equipment. Available in 3, 5 and 7½ hp sizes, distribution will be accomplished through the company's established distributors and dealers.

Units are powered by a two-stage, hermetically sealed compressor and require only three plumbing and one electrical connection for installation. Weights range from 884 to 950 lbs., and all models are enclosed in the same size cabinet.

### Roberts-Gordon To Build Dual Fuel Conversion Burner

PRODUCTION of a Dual Fuel conversion burner, under license by Midwest Research Institute, Kansas City, Mo., will be undertaken shortly by Roberts-Gordon Appliance Corp., Buffalo, N. Y. Forced warm air furnaces and boilers will be offered as complete units.

*John W. James* has been appointed chief research engineer, McDonnell & Miller, Inc., Chicago, Ill. Since 1934 he had been with Iron Fireman Mfg. Co. as research engineer and before that had spent eight years as technical secretary, ASHVE. Mr. James will be located in the general offices of the company.

*John E. Horton* has incorporated his oilburner business at Albany, N. Y., as Horton Heating Corp. Incorporators were listed as John E. and A. B. Horton and William Cowley.

*Clarence L. Randall* on June 1 announced the establishment of his own company to sell and install heating equipment. Offices will be maintained in Union City and Passaic, N. J.

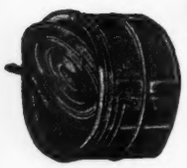
### *Oilheating Trends*

(*Continued from page 11*)

size. The Mid-Atlantic area is the stronghold of fueloil contracts with 63% of companies using them; In New England the number is 38% and in the Midwest 33%. The Pacific areas rarely use fueloil contracts. The reporting fueloil distributors got in 61% of the contracts by mail without solicitation . . . a surprisingly low figure from the viewpoint of security to the customer, and probably held down by experiences or fears of price loading if the market should again become tight.

DEALER COMMENTS: Among comments on the month's questions, these are representative: "Our oil contracts are self-renewing" . . . "Three cheers for the Oil Heat Institute of New England for their ads and coverage to push oilheating in the newspapers" . . . "Our prospects are holding off to see if they can possibly get natural gas which is very much cheaper fuel in this territory; fueloil must come down in price by the time natural gas gets back in full volume" . . . "The over all picture looks better" . . . "If these fuel dealers who


PREFERRED
DRAFT-A-JUSTOR

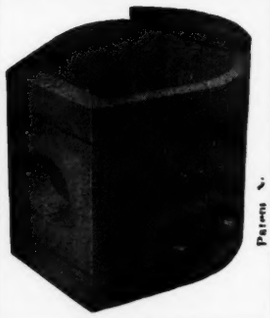


**The Original. Still the Best. Hundreds of Thousands in Use.** • Holds the draft constant in the fire box. • Scientific draft control for the smallest to the largest jobs. • Stove, domestic, and commercial sizes from 4" to 24" in diameter. • Industrial sizes from 24" x 24" to 5' x 12'.

Write for literature and trade price

PREFERRED UTILITIES Mfg. Corp.
1860 Broadway, New York 23, N. Y. Boston Office: 839 Beacon St.

truly TIME-TESTED



WHATEVER YOUR COMBUSTION CHAMBER NEEDS, WE PROBABLY HAVE A
LITE-CAST
CHAMBER TO DO THE JOB
WRITE FOR LITERATURE AND MORE COMPLETE DETAILS TO
Monogram Products Co.
PHILADELPHIA 4, PA.

EXCLUSIVE SPIRAL FLUE
gives you more to sell!

Here's "horizontal" boiler efficiency with "vertical" boiler compactness! The exclusive Spiral Flue (Pat. applied for) is offered only by EVEREDY and OILTRONIC Burner-Boiler Units. Capacities up to 1,043,000 BTU.
CONVERSION OIL BURNERS
0.65 to 20 G.P.H.

MT. HAWLEY MFG. COMPANY
MT. HAWLEY AIRPORT PEORIA, ILLINOIS

SEE THE NEW #20 TRANSFORMER
√20% Smaller
√20% Lighter
COSTS 10% LESS
Manufactured only by NEWARK—another NTC first
NEWARK TRANSFORMER CO.
LINDEN, NEW JERSEY

Rajah

HAND CRIMPING TOOL

IT CUTS
AND STRIPS
AND ALSO CRIMPS
Rajah Terminals to ignition cable
without the use of solder or any other tools

The RAJAH COMPANY,
Bloomfield, N. J.



the ONLY Ignition Transformer with a 2 YEAR Guarantee

Super

ELECTRIC PRODUCTS CORP.

1057 Summit Avenue, Jersey City 7, N. J.


sell both coal and oil would quit harping oil shortage and instill more confidence in their advertising and selling we equipment men would not have such rough going" . . . "The trend is better, but we need some ads from oil companies, assuring supply" . . . "Best bet is to keep on plugging" . . . "Will concentrate on replacement selling mostly" . . . "We are only trying to replace lost customers with new" . . . "Our oil customers are anxious to get assurance of product for next season" . . . "Situation very serious; many dealers will have to close their doors" . . . "The public is really burner minded but afraid of oil shortage, so I guarantee an oil contract with every sale" . . . "Situation still tight; we have no surplus fueloil to sell for the season" . . . "Few prospects in this section, because of oil price" . . . "Will another bad oil scare put us out of business" . . . "First three months were pretty low, but April and May were 85% of last year" . . . "The price of fueloil is certainly helping to sell liquefied petroleum gas here" . . . "We have half of our summer fills completed."

*Ellis L. Redden* has advanced to the position of director of advertising and sales promotion, Crosley Div., Avco Mfg. Corp., Cincinnati, Ohio. He previously had been in the same capacity with Norge appliances, and also had been associated with Delco-Heat and National Radiator.

*Julius Stratmeyer* died on May 6, according to an announcement by Penn Service Oil Co., Reading, Pa. Mr. Stratmeyer had been serving as director and secretary-treasurer for the company at the time of his death.


KUT-A-SYZ Flexible Coupling

Simple as 1-2-3

64 Couplings in One!

Fitted with detachable metal ends. Can be cut quickly, accurately to any size from 1½" to 8". Forms securely gripped joint. Made of finest oil-resistant rubber.
- Reduce Coupling Inventory
- Save Time on Service Calls
- Have Right Size Coupling Always FOOH7

WRITE FOR DETAILS NOW

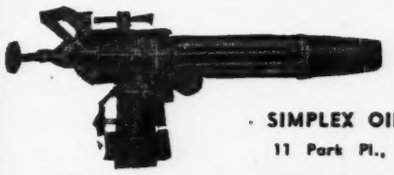
KUT-A-SYZ
MANUFACTURING CO.
3612 E. Tremont Ave., N.Y. 61, N.Y.



Since SIMPLEX 1910

SIMPLEX OIL BURNING SYSTEMS

Simplex Oil Burning Systems



RESULTS COUNT!

SIMPLEX OIL HEATING CORP.
11 Park Pl., New York 7, N. Y.



STANDARD WATER TUBE BOILERS

A MODERN HEATING PLANT FOR BETTER HOMES!

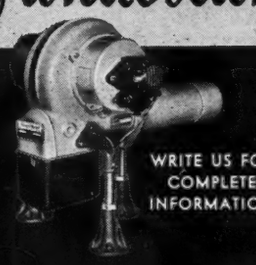
designed for ECONOMY of OPERATION
DEPENDABILITY and
EFFICIENCY

Write for BULLETIN No. 108

Standard Heater & Oil Equipment Co.
245 CORNELISON AVENUE, JERSEY CITY 2, NEW JERSEY



Sundstrand OIL BURNERS



WRITE US FOR COMPLETE INFORMATION

FOR
- CLEAN
- QUIET
- ECONOMICAL
- AUTOMATIC HEAT

SUNDSTRAND ENGINEERING CO.
ROCKFORD, ILLINOIS

PROTECT
Exposed Metals — Underground Pipe —
with Flexiblac!
Cabot's Flexiblac is a glossy black protective coating for all metal surfaces. Flexiblac is not acted on by acids or fumes . . . is proof against moisture and gases . . . stands high heat . . . will not crack or scale . . . remains flexible for years . . . thoroughly protects galvanized iron, on which ordinary paints are worthless. Flexiblac, widely used in the heating and air-conditioning field, is also inexpensive . . . costs ¼ as much as red lead—½ as much as ordinary oil paints.
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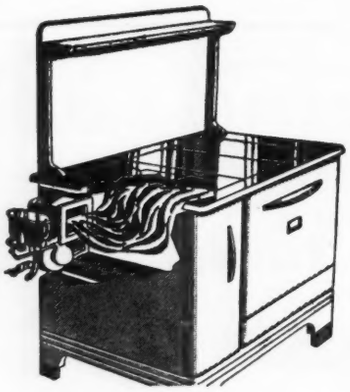
*Profits!*

Through the

**SUPER-THERM**

*Combination*

**OIL BURNER**



SALES prospects for this modernizing, easily installed oil burner are *all* owners of gas, wood and coal stoves and ranges. Super-Therm fits any size stove, front or rear —will last a lifetime—will not soot or smoke—has automatic safety features. Write now for details and *dealer profit* facts.

**THERM OIL BURNER CO.**

*Pioneers of the Oil Burning Industry*

2105A Westlake Avenue

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## DEGREE DAY TABLES

| ONE MONTH ONLY — May Normal | May 1947 | May 1948 | Percent Change* | | SEASON TO DATE (Sept. 1 to May 31) Normal | 1947 | 1948 | Percent Change* |
|---|---|---|---|---|---|---|---|---|
| 221 | 281 | 290 | + 31.2 | Albany | 6587 | 6531 | 7398 | + 12.3 |
| 32 | 43 | 7 | — 78.1 | Atlanta | 2999 | 2922 | 2818 | — 6.0 |
| 99 | 126 | 80 | — 19.2 | Baltimore | 4509 | 4147 | 4469 | — 0.9 |
| 248 | 286 | 313 | + 25.7 | Boston | 5853 | 5415 | 6162 | + 5.3 |
| 351 | 376 | 372 | + 6.0 | Buffalo | 6805 | 6450 | 6687 | — 1.7 |
| 259 | 359 | 324 | + 25.0 | Chicago | 6205 | 6269 | 6306 | — 1.6 |
| 132 | 149 | 89 | + 32.5 | Cincinnati | 4993 | 4917 | 4590 | — 8.1 |
| 255 | 283 | 268 | + 5.1 | Cleveland | 6094 | 5852 | 6050 | — 0.7 |
| 14 | 11 | 4 | — 71.4 | Dallas | 2378 | 2475 | 2693 | + 13.2 |
| 271 | 292 | 202 | — 25.4 | Denver | 5784 | 5894 | 5533 | — 4.3 |
| 165 | 270 | 166 | + 0.6 | Des Moines | 6356 | 6452 | 6361 | — 0.1 |
| 252 | 352 | 298 | + 18.3 | Detroit | 6502 | 6280 | 6522 | + 0.3 |
| 263 | 381 | 298 | + 13.3 | Grand Rapids | 6655 | 6367 | 6467 | — 2.8 |
| 216 | 273 | 254 | + 17.6 | Hartford | 6037 | 5809 | 6578 | + 8.9 |
| 409 | 342 | 392 | — 4.2 | Helena | 7600 | 7887 | 7853 | + 3.3 |
| 12 | 0 | 0 | .. | Houston | 1333 | 1489 | 1557 | + 16.8 |
| 155 | 188 | 129 | — 16.8 | Indianapolis | 5459 | 5399 | 5369 | — 1.7 |
| 106 | 127 | 79 | — 25.5 | Kansas City | 4971 | 4869 | 4962 | — 0.2 |
| 104 | 67 | 75 | — 27.9 | Los Angeles | 1362 | 1335 | 1484 | + 9.0 |
| 92 | 137 | 66 | — 28.2 | Louisville | 4421 | 4277 | 4351 | — 1.6 |
| 340 | 474 | 399 | + 17.3 | Milwaukee | 6955 | 7170 | 7212 | + 3.7 |
| 255 | 359 | 228 | — 10.5 | Minneapolis | 7898 | 7888 | 8008 | + 1.4 |
| 1 | 0 | 0 | .. | New Orleans | 1208 | 1380 | 1626 | + 34.6 |
| 176 | 216 | 209 | + 18.7 | New York | 5270 | 4833 | 5367 | + 1.8 |
| 152 | 214 | 123 | — 19.0 | Omaha | 6074 | 6142 | 6217 | + 2.4 |
| 115 | 165 | 134 | + 16.5 | Philadelphia | 4720 | 4693 | 4923 | + 4.3 |
| 170 | 183 | 193 | + 13.5 | Pittsburgh | 5427 | 5267 | 5443 | + 0.3 |
| 375 | 426 | 467 | + 24.5 | Portland, Me. | 7128 | 7129 | 7672 | + 7.6 |
| 241 | 109 | 253 | + 4.9 | Portland, Ore. | 4214 | 4161 | 4204 | — 0.2 |
| 245 | 243 | 253 | + 3.2 | Providence | 5946 | 5335 | 6393 | + 7.5 |
| 88 | 115 | 81 | — 8.0 | St. Louis | 4602 | 4650 | 4768 | + 3.6 |
| 233 | 133 | 234 | + 0.4 | Salt Lake City | 5568 | 5721 | 5782 | + 3.8 |
| 252 | 231 | 293 | + 16.3 | San Francisco | 2569 | 2971 | 2866 | + 11.6 |
| 485 | 674 | 516 | + 6.3 | Sault Ste. Marie | 8901 | 8943 | 8888 | — 0.2 |
| 304 | 163 | 307 | + 0.9 | Seattle | 4560 | 4417 | 4680 | + 2.6 |
| 226 | 304 | 268 | + 18.6 | Toledo | 6202 | 6178 | 6460 | + 4.2 |
| 104 | 121 | 88 | — 15.4 | Washington | 4582 | 4036 | 4369 | — 4.6 |

*Compared with normal.